



White Paper

# What's New in BarTender 9.0

Details about our Biggest New  
Release in Over 10 Years

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## Overview of BarTender 9.0

Version 9.0 of our BarTender label and RFID software is Seagull's biggest software release in over ten years, and includes the following additions:

- [\*Printer Maestro\*](#) application provides super-friendly centralized management of every printer and queue on any size network.
- [\*Printer Media Usage Tracking\*](#) and inventory control of printer parts.
- New [\*BarTender System Database\*](#) lets you log more detailed print job information and be better prepared for high-security audits.
- [\*History Explorer\*](#) provides easy, highly flexible navigation and viewing of past print jobs.
- [\*Reprint Console\*](#) lets you easily replace lost or damaged labels, even if the original label data is no longer readily available.
- New [\*Integration\*](#) features.
- Other new features.

This section provides a very brief overview of these new capabilities, with more detail appearing in the sections that follow.

### *New Features and Capabilities*

In addition to major enhancements to BarTender, a family of companion applications have been introduced that (together with BarTender) form what we call the “BarTender Label Management Suite.”

#### *“Printer Maestro” Delivers True Enterprise Print Management*

Front and center in version 9.0 is the “Printer Maestro” application for enterprise print management. It provides users of any Windows program (not just BarTender) with a *single* application window in which to view the status of all printers and print jobs for all computers on a network. (In contrast, Windows otherwise requires you to “pop-up” a separate window for *each* printer.) Beyond that, Printer Maestro provides a variety of powerful print management functions that are simply not available using Windows' native functionality. [\*More details...\*](#)



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### *Printer Media Usage and Parts Inventory Tracking*

The Enterprise Print Server edition of Printer Maestro adds printer media usage tracking, providing users on-screen “meters” that show the quantity of labels and ribbon remaining for each printer. The inventory of printer media as well as printer parts (such as print heads, memory, font cartridges, etc.) can also be maintained in the associated Inventory module. E-mail and text message alerts can automatically be transmitted to warn about low media in printers and low inventory in storerooms. Resellers can even set themselves up to be copied, so that they can learn when users may be low on printer supplies and ready for new stock. [More details...](#)

### *Detailed Logging to a Database*

Version 9.0 of BarTender also introduces detailed logging of print job information and application messages to a database. To support high-security audits, logged information includes who printed each job, any warnings or errors that may have been generated, what label data was printed, and an optional software-generated image of each label. [More details...](#)

### *Inspect and Audit Past Jobs Using History Explorer*

Seagull's new History Explorer application makes it easy to search through print job information and messages stored in the BarTender System Database and “drill down” into selected records for a closer look. Inspect print job times, label data, label images, error messages, and a wealth of additional information. [More details...](#)

### *Reprint Lost or Damaged Labels*

Within History Explorer, you can easily right-click to transmit a request to BarTender to print all of the labels in a selected job or a single selected label. Users looking for more-detailed reprint control can instead use the separate Reprint Console application and select any combination of labels from a past print job for reprinting. [More details...](#)

### *New Integration Features*

With version 9, BarTender continues its long-standing position of leadership in the vital area of integration with other software. For more details on these new features, see the [dedicated section](#) later in this document.

#### ***New ActiveX Automation Capabilities***

- Export “Print Preview” Images
- Notification of Command Line Completion

#### ***New XML Script Capabilities***

- Addition of XML Script Response

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- New XML Script Commands

### *New Commander Capabilities*

- Add and Modify Tasks without Stopping the Commander Service
- New Messages for Starting/Stopping the Commander Service
- New Transform Capabilities

### *Other New Features in BarTender 9.0*

For more details on these additional new features, see the [\*dedicated section\*](#) later in this document.

- Enterprise Support for up to 8,191 Printers
- Read Label Graphics Directly from a Database Field
- Manually Load and Execute XML Script from Inside of BarTender

### *Marketing Support for BarTender 9.0*

This “What’s New” document will remain the most-detailed single source of information on version 9 of BarTender.

### *Other New White Papers in Development*

Portions of this document’s already very detailed information on Printer Maestro, Print Job Logging, the BarTender System Database, History Explorer and Reprint will be included and expanded upon in more detailed white papers dedicated to those topics. (At the time of release of BarTender 9.0, these other new white papers were not yet available.)

### *“Full Details” Brochure Pending*

The textual content of the on-line version of the “Full Details” brochure was updated for the release of BarTender version 9. However, the updated *printed* version was not yet ready at the time of the release of BarTender 9.0. The Full Details brochure will next be updated as follows:

- The cover art and format will receive the “look and feel” upgrade already given to the Quick Summary brochure. (See next item, below.) The dimensions of the Full Details brochure will remain at the “2/3rds page” size and will *not* be increased to the new “full page” size now used for the Quick Summary.
- This upgraded brochure will be uploaded and become the new on-line version.
- After this second on-line publish, the printing plans for update of the Full Details brochure will be announced.

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### *New "Quick Summary" Brochure and Format*

In addition to Seagull's extensively detailed "Full Details" brochure (in English only), Seagull has for years maintained a smaller "Quick Summary" brochure so that we could most cost-effectively:

- Translate into 22 languages.
- Provide resellers with a free option for supplying large numbers of customers with brochures. (Resellers also have the option of distributing our Full Details brochures at a price below our manufacturing cost.)



### *New Cover and Format*

To emphasize the significance of the upgrade to version 9, the new Quick Summary brochure has been totally redesigned. In addition, in response to requests from our resellers, we have increased the dimensions from a 2/3rds page size to a "full-page" size, so that it will better fit into literature racks at trade shows. (The hybrid dimensions use the slightly shorter height of the American format and the slightly narrower width of the international A4 format. This ensures universal compatibility with *all* "full-page" size literature racks and envelopes.)

### *Now Includes Integration Diagram*

Because of the larger dimensions of the Quick Summary brochure, we were able to include the attractive and very helpful integration diagram, previously only available in the Full Details brochure. This is one of a number of added details that help to make the Quick Summary brochure a more substantial promotional document in its own right.

At the time of the release of version 9.0 of BarTender, 11 language versions (including English) were ready or nearly ready for distribution.

### *Information on the Web*

A dedicated web page on our web site is the best central location for links to information on BarTender 9.0:

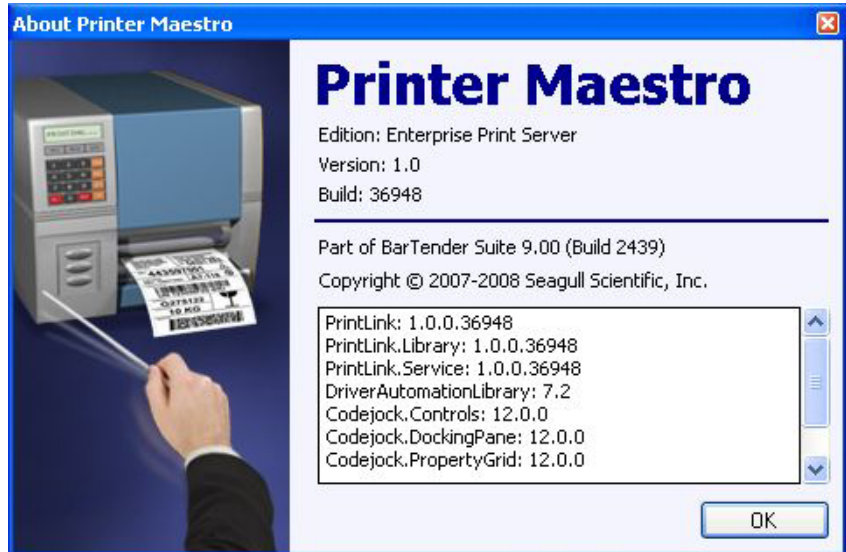
<http://www.seagullscientific.com/asp/BarTender900.aspx>

(A link to this page has been added on the "Online and Printable Brochures" page,

<http://www.seagullscientific.com/asp/printablebrochures.aspx>.)

## ***"Printer Maestro" Simplifies Printer Management***

Version 9.0 of BarTender introduces our new "Printer Maestro" print management application for use with the Professional and Enterprise editions of BarTender. (Printer Maestro is not available for use with the Basic edition.) Unlike a number of label programs, BarTender has never *required* the use of a custom print manager in order to work. This is still true. In fact, Printer Maestro is not directly involved in the BarTender printing process at all. What Printer Maestro does is provide you with a variety of print management functions that Windows by itself simply does not provide. What's more, these capabilities are useful whether you are printing with BarTender or any of your other Windows applications.

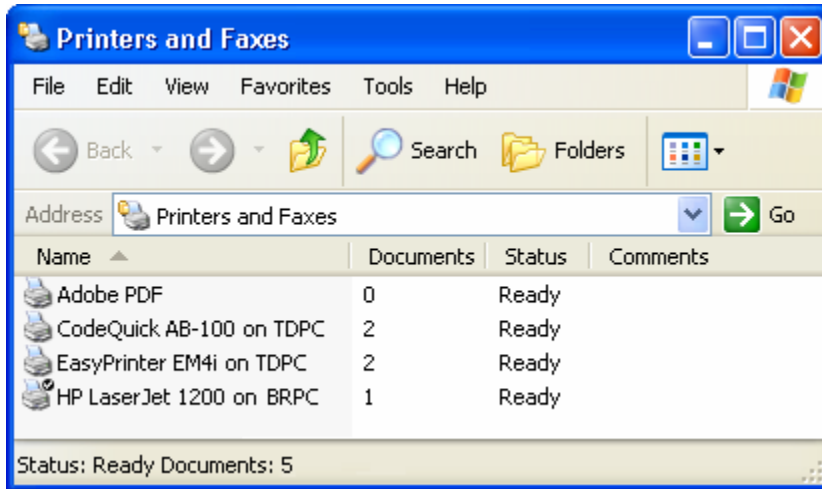


To better understand the significance of Printer Maestro, let's first consider some limitations inherent to how Windows traditionally manages printers and print jobs.

### *Understanding Traditional Printer Management on Windows*

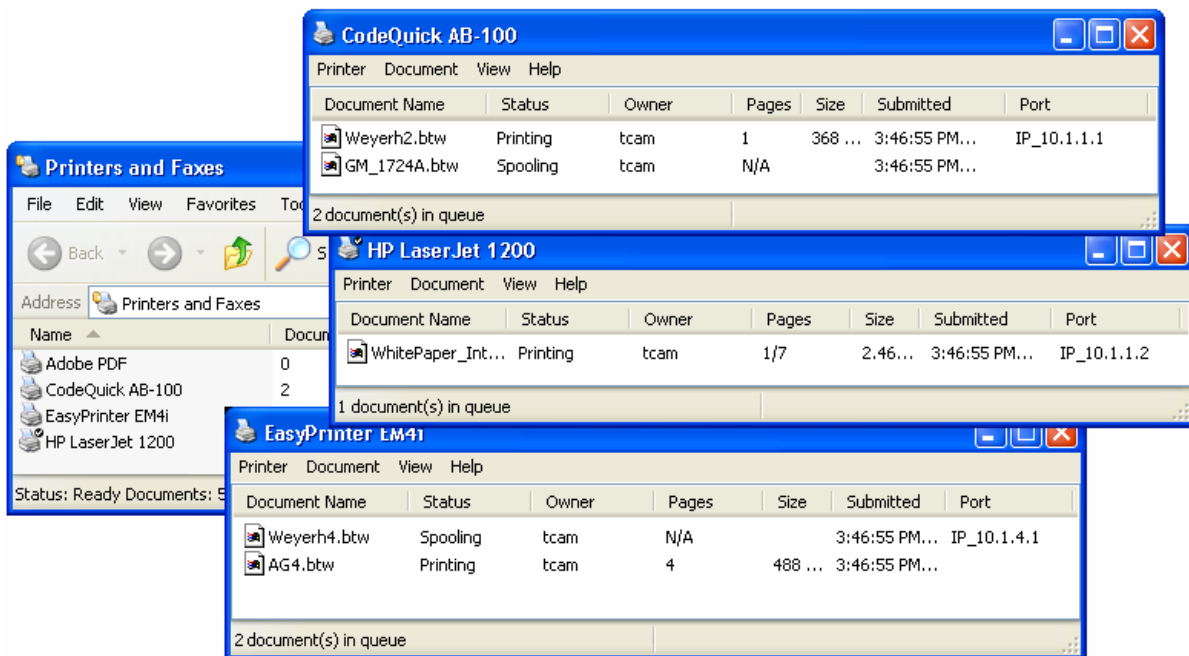
A major factor that first made the Windows operating system successful was the highly flexible printer driver architecture, which made it easy for programs to output to many more printers than had previously been possible. Ironically, the management of Windows print jobs in between the time they leave the printer driver and the time that they actually start printing has been very primitive. So has the management of the printers themselves. Windows does not even offer a network-wide "enterprise view" of printers and print jobs. Even on a single workstation, Windows uses a rather clumsy multiple-dialog view of the print jobs that have been launched from a workstation. Consider a typical view of the Windows "Printers and Faxes" folder:

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*The “Printers and Faxes” folder on a Windows workstation displays only the network printers available for printing from that workstation.*

The “Printer and Faxes” dialog describes whether or not each printer is printing, but it does not provide any clues about how many jobs are queued and where they originated. To see this information you have to double-click the desired printer to pop up a separate view that lists any queued jobs. And you have to pop up even more views for each and every additional printer whose print jobs you want to see.



*Without Printer Maestro, the Windows operating system requires you to pop up a dedicated window for each printer whose print jobs you want to see.*

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The same limitations exist if you want to modify a printer's configuration settings: You have to make these changes *one printer at a time*.

Furthermore, the Windows Printers and Faxes folder for each workstation will only list the printers for which there are drivers installed on that computer. That means that any given Windows computer is completely blind to any network printers for which the drivers are only installed on other computers. In other words:

The concept of centralized print job and printer management simply does not exist as part of Windows native "out-of-the-box" functionality.

These limitations were a major factor in our decision to develop a cleaner and better organized way to view and manage Windows print jobs and printers.

### *"Printer Maestro" Overview*

The word "Maestro" (Italian for "master") is a title of respect used to address the conductor of an orchestra or symphony. With this in mind, it is easy to remember that Seagull's "Printer Maestro" application is designed to help you better "conduct" the management of the printers and print jobs on your network.

Printer Maestro takes what Windows does best when managing a single printer and its print jobs, improves upon it, and scales it up to provide powerful, user-friendly print management at the enterprise level. We think that Printer Maestro provides the kind of functionality that Windows would have provided if it was designed from the ground up with network print management in mind. (A separate, dedicated white paper will describe Printer Maestro in more detail.)

- ***Unified Display Window***: Unlike Windows by itself, Printer Maestro provides a single, convenient window that shows the status of all printers and print jobs from a given workstation, whether printed by BarTender or not. (Available in Professional and all Enterprise editions.)
- ***Single, Centralized Enterprise-Wide View of all Network Print Jobs***: With the Enterprise Print Server edition, Printer Maestro's unified display window shows the status of all print jobs from all printers accessible to every single copy of Printer Maestro installed on a network! And, don't forget, this is not limited to BarTender jobs – you can see print jobs from other applications too.
- ***Easily Configure Selected Driver Settings for Multiple Printers at Once***: Printer Maestro lets you select multiple printers at once and configure a variety of available settings all at the same time! (In contrast, using the traditional printer configuration capabilities of Windows, you individually configure printers one at a time using each printer's "Properties" dialog.)

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- *[Configure Settings for Remote Printers](#)*: As long as Printer Maestro is installed on a computer, you can configure properties for printers on that computer from a copy of Printer Maestro running anywhere else on the network. (With the Enterprise Print Server edition, you only need the printer driver installed on the computer that hosts the printer. With the “lower” editions of Printer Maestro, the driver also needs to be installed on the PC that is running Printer Maestro.)
- *[Alerting](#)*: Quickly learn about stalled print jobs and other printing problems by e-mail and “instant” text message. (Available in Enterprise Print Server edition only.)
- *[Printer Media Usage Tracking](#)*: The consumption of the ribbon and label stock in a printer can be tracked and alerts sent out for “low” conditions. (Available in Enterprise Print Server only.)
- *[Inventory Control](#)*: Inventory levels of not just printer media, but also printer parts (such as print heads, memory modules and font cartridges) can be maintained in digital “store rooms.” (Available in Enterprise Print Server only.)

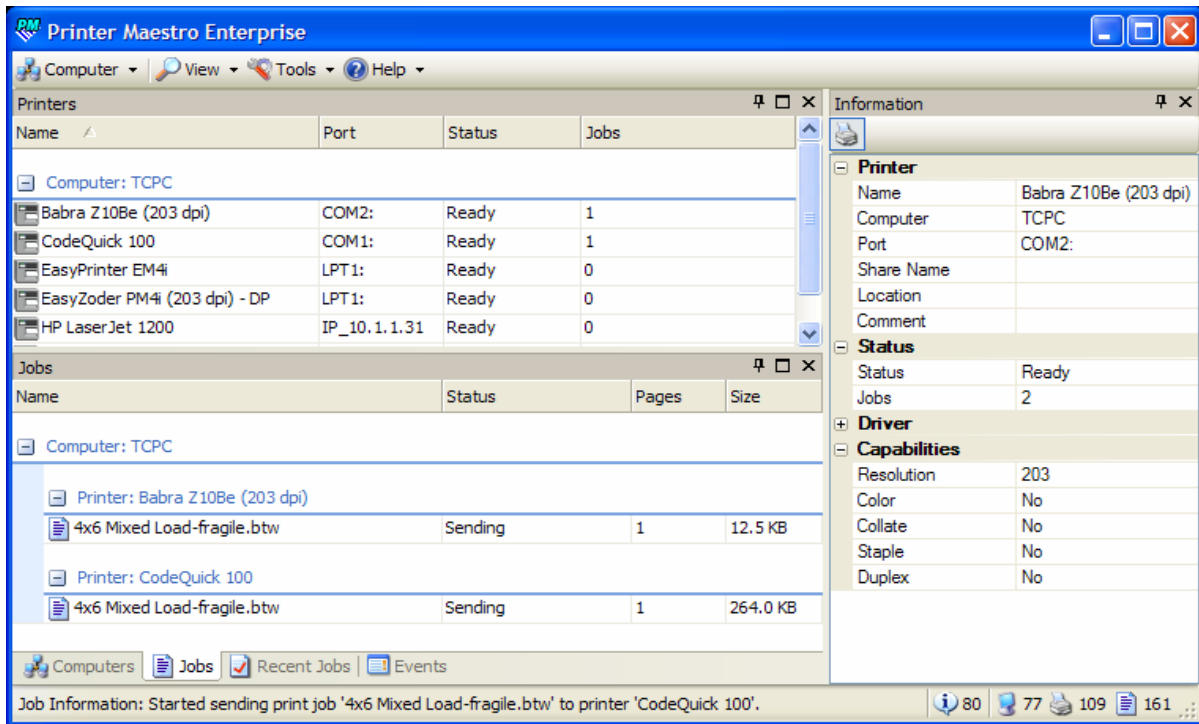
### *“Printer Maestro” Details*

As we now examine Printer Maestro in more detail, please remember that not all features are available in all editions. See the above “Overview” for information on edition support.

#### *Unified Display Window*

We have already seen that traditional Windows print management without the help of Printer Maestro requires you to display one folder to list your available printers and additional folders for each printer whose active print jobs you want to examine. In contrast, Printer Maestro can display your available printers and their print jobs in a *single* on-screen view.

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*Printer Maestro lets you manage multiple printers and print jobs using a single view.*

Some features of Printer Maestro's unified print management view include:

### *A Simple "Explorer" Type Interface*

Printer Maestro takes more of an "Explorer" approach to viewing the print jobs on your network. You see more of the "architecture" of your printer network, so it's easier to navigate to other workstations and see the jobs that are printing there. And it's easy to sort your print jobs to suit your preference, just as you might sort files by name, data or type, etc.

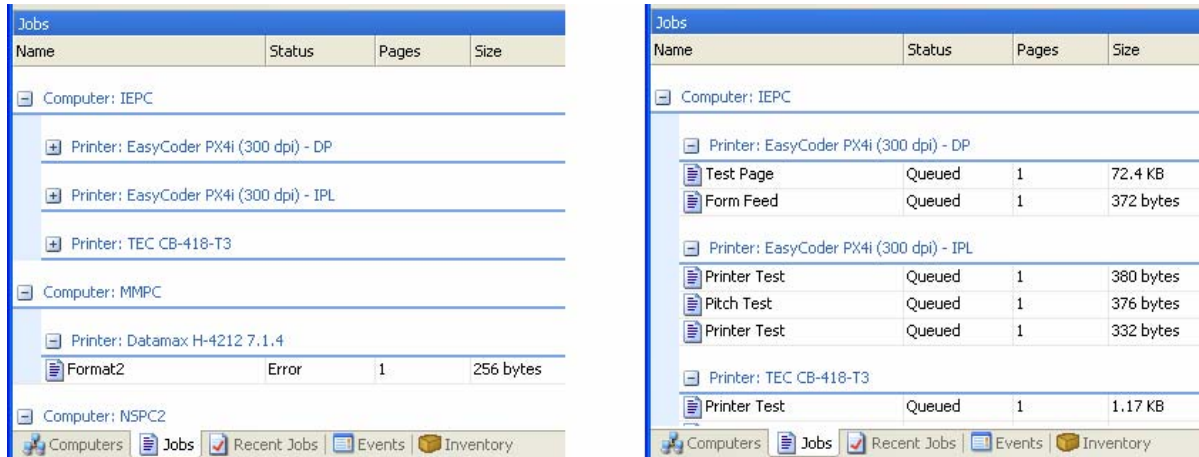
Jobs			
Name	Status	Pages	Size
Printer: TEC CB-418-T3			
Book1	Queued	4	64.0 KB
ddc05agenda.xls	Queued	63	379.0 KB
Printer Test	Queued	1	1.17 KB
Printer Test	Queued	1	1.17 KB
Printer Test	Queued	1	1.17 KB
TECTest.xlsx	Queued	2	18.9 KB

Jobs			
Name	Status	Pages	Size
Printer: TEC CB-418-T3			
ddc05agenda.xls	Queued	63	379.0 KB
Book1	Queued	4	64.0 KB
TECTest.xlsx	Queued	2	18.9 KB
Printer Test	Queued	1	1.17 KB
Printer Test	Queued	1	1.17 KB
Printer Test	Queued	1	1.17 KB

*Active Windows print jobs first shown sorted by job name and then sorted by job size.*

### *“Tree” Navigation Shows you only as Much Information as you Want*

The key to avoiding a “big mess” when displaying so much information in a single view is the use of expandable “tree nodes.” Depending on your preference, you can collapse any number of computer and printer nodes in order to view fewer of the printers and print jobs on your network. Or you can expand nodes to see more or all of your networks printers and associated jobs



*Collapse and expand the view of individual PCs and printers to selectively control the number of displayed printers and print jobs.*

### *Works for Print Jobs from Any Windows Program!*

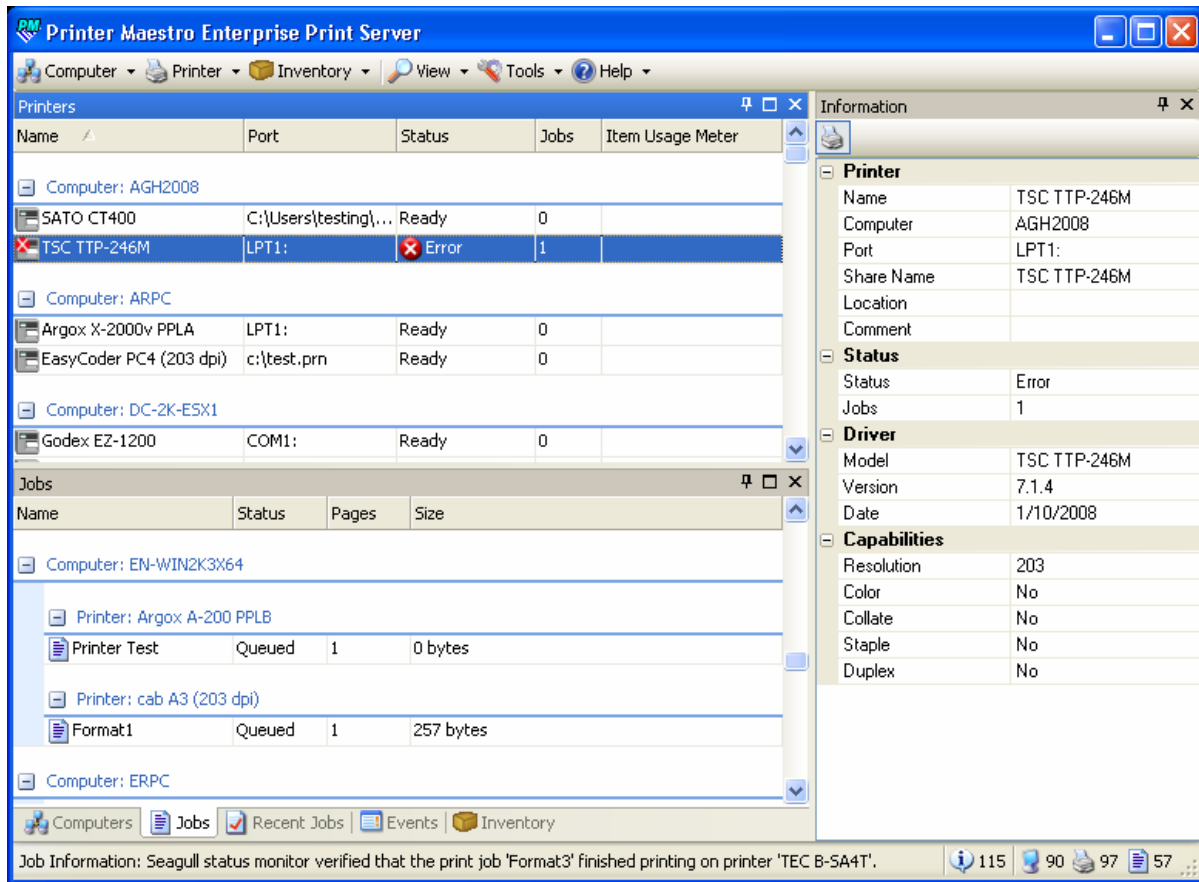
In the above screen images, you can see that there are print jobs listed that were not generated by BarTender and don't use Seagull drivers. That is because Printer Maestro is not limited to supporting only the BarTender Label Management Suite. It is a general purpose utility that is deeply integrated with the existing print management functions within the Windows operating system. Printer Maestro consolidates information that is already available from Windows into a single, convenient, and highly configurable viewing window.

### *Single, Enterprise-wide View of all Network Print Jobs*

We have just seen how Printer Maestro can display print job information in a single view instead of the multiple views that is traditional in Windows. When Printer Maestro is installed on workstations running any of the Professional, Enterprise and RFID Enterprise editions of BarTender, this single-view is limited to local and network printers that are installed in the Windows “Printers and Faxes” folder of each workstation. However, when you run Printer Maestro on a workstation where the Enterprise Print Server edition of BarTender is installed, you can actually view every print job for every printer attached to any network computer that has a copy of Printer Maestro installed.

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Again, this powerful enterprise management capability applies to *all* print jobs – not just those generated by BarTender.



*With the Enterprise Print Server edition, Printer Maestro can display every printer and job on the network without even having the right printer drivers installed.*

### Installation of BarTender Not Required on all Systems:

As long as you install a copy of Printer Maestro onto a computer, the printers accessible to that PC can be made visible to all other copies of Printer Maestro running on the network. However, both Printer Maestro and BarTender need to be installed on the computers from which you want to *view* printers and print jobs. Furthermore, when you view from a computer that has the Enterprise Print Server edition of BarTender installed, you don't even have to set the other computers' printers to "shared" or install their printer drivers on the viewing PC.

### *Easily Configure Selected Driver Settings for Multiple Printers at Once*

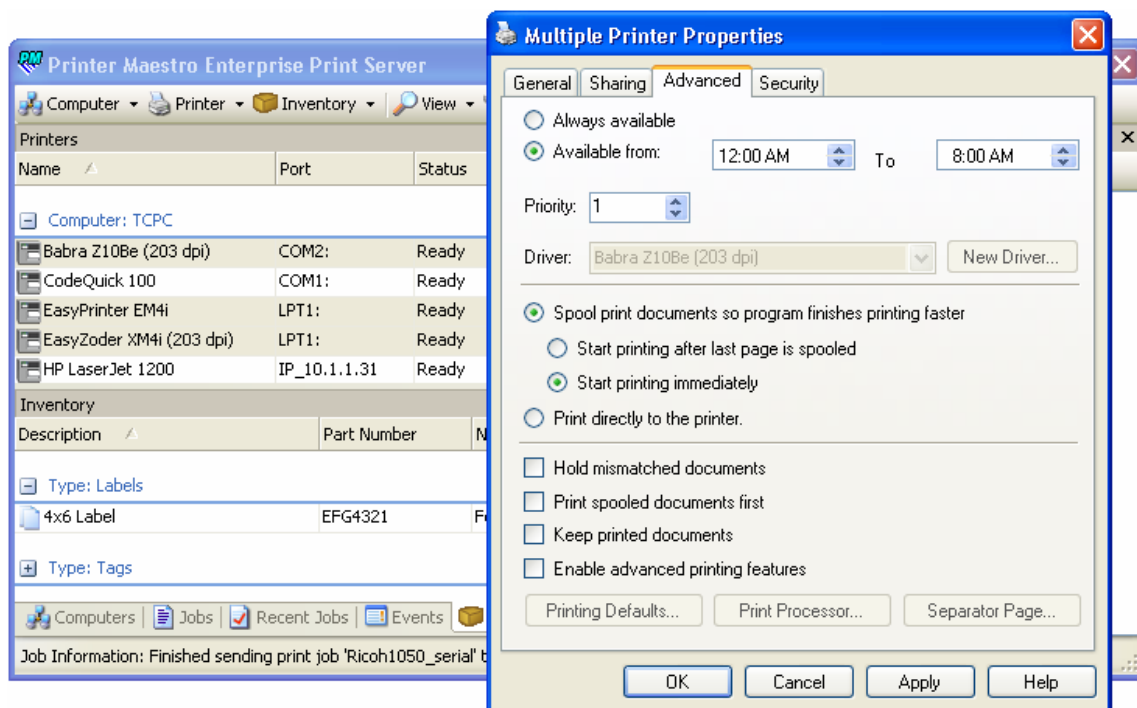
With the traditional printer configuration capabilities of Windows, you change printer settings by right-clicking on one printer at a time in the Printers and Faxes folder on Windows and individually configure settings from within each printer's "Properties" dialog. When

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configuring printer settings that are unique to a particular printer, you cannot do much better than that. However, there are some printer driver settings that many printers share in common. Printer Maestro takes advantage of this fact to allow configuration of *multiple* printers at the same time! Best of all, the user-interface is so similar to the existing function in the Windows Printers and Faxes folder that there is practically nothing new to learn:

1. Within Printer Maestro click on the printers for which you want to modify the printer settings. (Use “shift-click” to select multiple printers in a row and “ctrl-click” to select any combination of multiple printers.) See multiple printers become “selected.”
2. Next, right-click anywhere in the list and select **Properties**, just as you would in the Printers and Faxes folder.
3. A familiar-looking dialog will now be displayed. However, instead of having the name of a printer in the title bar, followed by **Printer Properties**, the title bar will now say, **Multiple Printer Properties**. Although this dialog looks very similar to the ones you have already seen in Windows, it is in fact the result of a special function within Printer Maestro that builds a common dialog of shared printer features on-the-fly.
4. Simply configure any of the displayed options as desired and press **OK**. The settings will change appropriately for *all* of the selected printers.

Again, this capability only applies to certain settings shared among the multiple printers that have been selected. This most commonly includes security, schedule and spooler settings.



*Printer Maestro combines the configuration options from multiple printers into a single, shared dialog.*

### *Configure Settings for Remote Printers*

In order to use the “Printers and Faxes” folder on one computer to remotely administer a printer installed on another computer, Windows has traditionally required that you first set the printer to be “shared” from the computer to which it is attached and that you install copies of the printer driver on any computer from which you desire access to that printer. Alternatively, if you have the required network rights, and you know how to do it, Windows also allows you to individually access the Printers and Faxes folder on each of the desired remote computers.

Neither of these two configuration methods presents a serious management challenge for just 1 or 2 printers. However, as an extreme example, consider the possibility of a 500 computer network, each with two printers (for a total of 1,000 printers). Using traditional Windows functionality, if you wanted to administer to all of the printers from a single “Printers and Faxes” folder, you would have to set each of the 1,000 printers to be “Shared,” as well as create 1,000 printer driver configurations on *each* of the other computers from which you wanted to perform remote administration. Although this is an extreme and arguably exaggerated example, it effectively points out Windows’ limitations in the area of remote printer management.

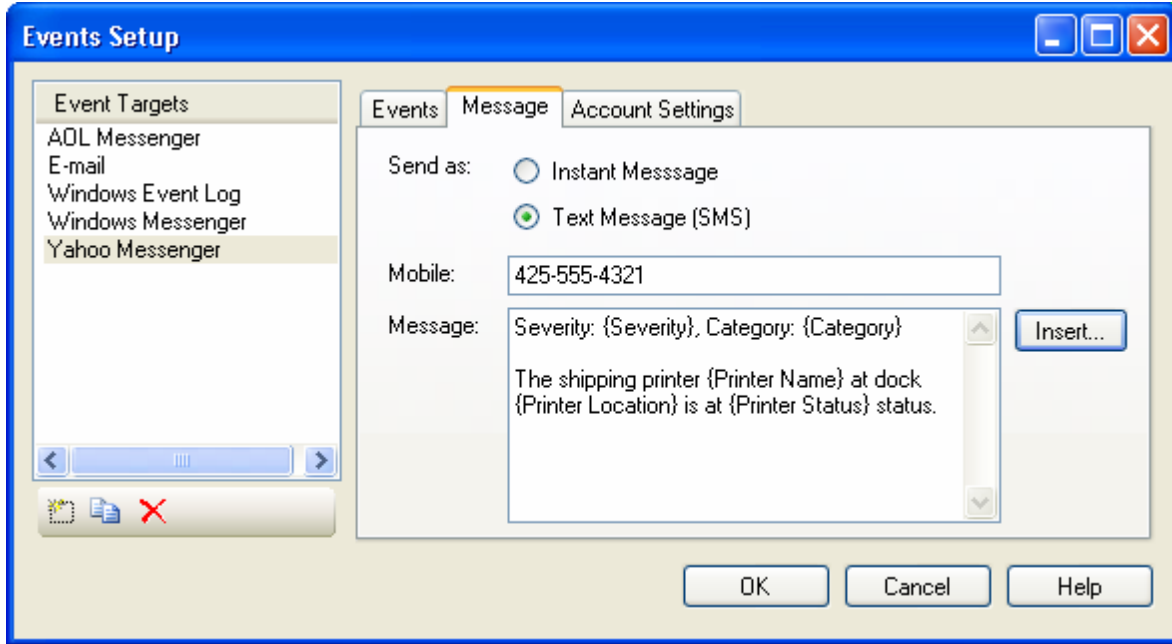
In contrast, with the Enterprise Print Server edition of Printer Maestro, you simply install a copy of Printer Maestro on each computer and that’s it. (The “lower” editions of Printer Maestro still make it easier to perform remote printer administration than the standard Windows method. However, you do need to install any printer drivers you wish to manage into the “Printers and Faxes” folder on the PC that will run Printer Maestro.)

Printer Maestro fully recognizes and uses the standard Windows security structure. That means that, if you don’t have the user rights necessary to access and modify a given printer’s settings, Printer Maestro will obey those constraints.

### *Alerting*

Printer Maestro is more than just good looking -- it has brains too! It can do more than simply display your printing problems on screen or log them – it can actually text message your cell phone with the news. That means you don’t have to stay at your computer during critical phases of label production. Printer Maestro lets you specify a variety of error and warning conditions that trigger both e-mail and “instant” text messages. Some of these conditions include:

- Paper low or out
- Ribbon low or out
- Printer-specific errors such as print head problems

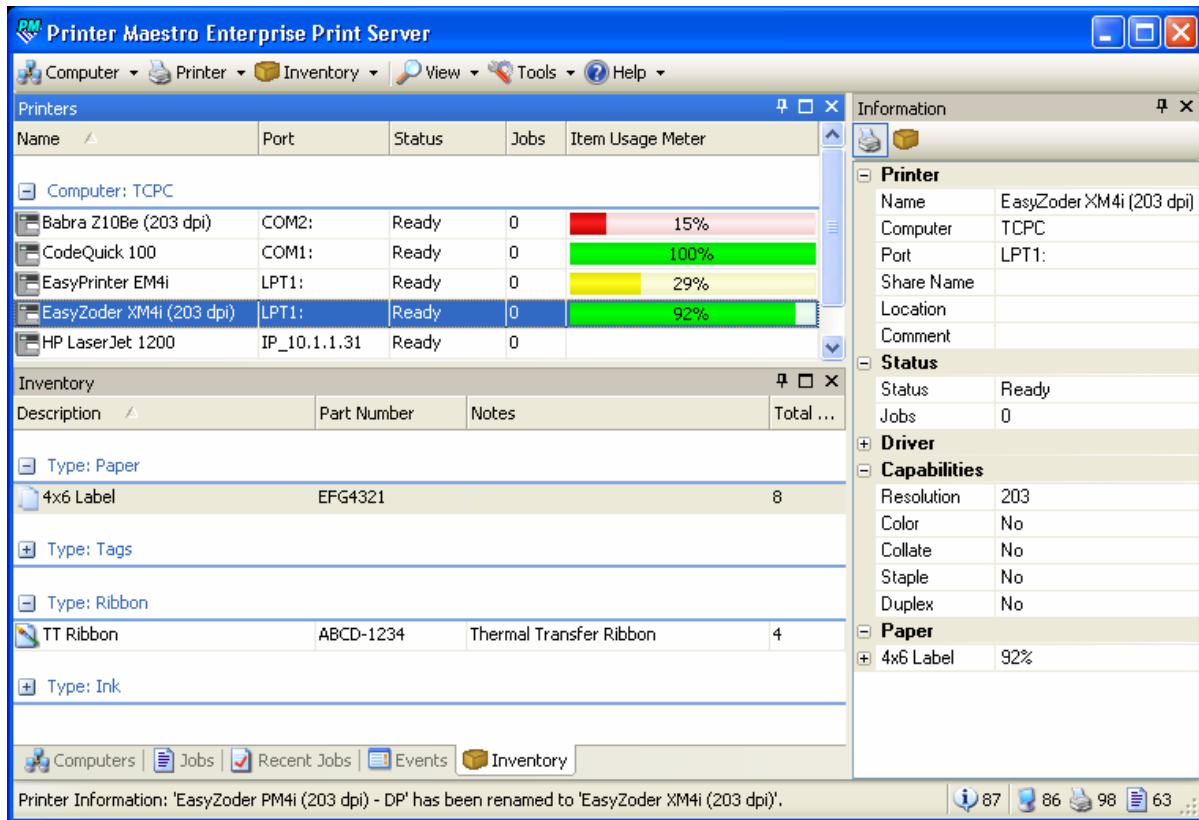


*Printer Maestro can alert you about printing problems in a variety of ways, including the transmission of text messages to your cell phone.*

### *Printer Media Usage Tracking*

One of the most exciting new features introduced with BarTender 9.0 is the ability to keep track of the label and ribbon consumption in each printer. However, this feature does not depend on the use of BarTender or even Drivers by Seagull™! That is because printer media usage tracking is managed by Printer Maestro (Enterprise Print Server edition). That means that, even if you are printing some labels with BarTender and some using other Windows software, as long as you are using a true Windows printer driver, Printer Maestro can track the media consumption.

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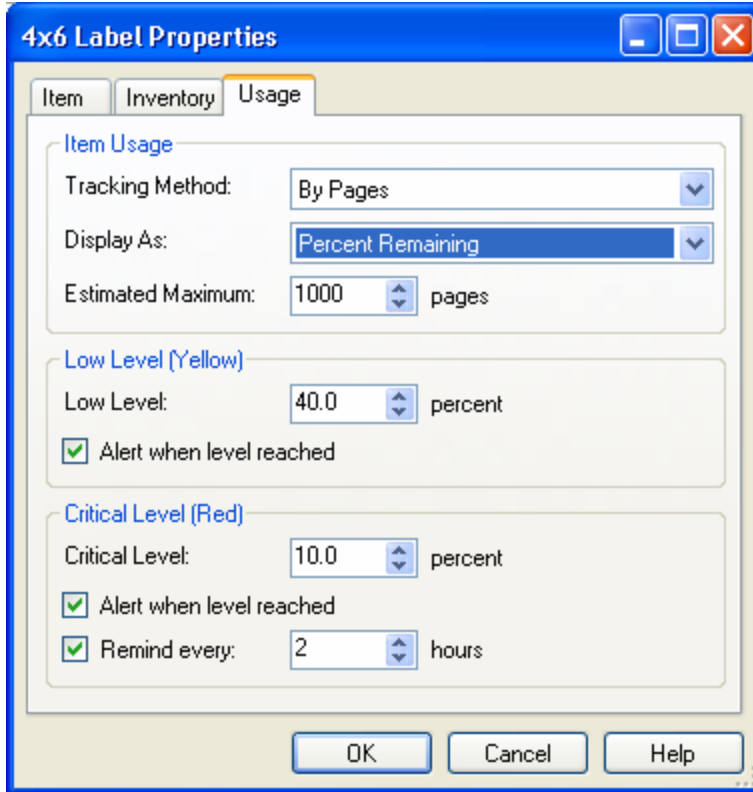


### ***“Low Media” Alerts Eliminate Unnecessary Downtime***

When you combine the Printer Media Usage Tracking feature with the alerting functions in Printer Maestro (both available in the Enterprise Print Server edition), you suddenly have the ability to eliminate printer downtime before it even happens.

### ***Almost Like a Free Printer Upgrade!***

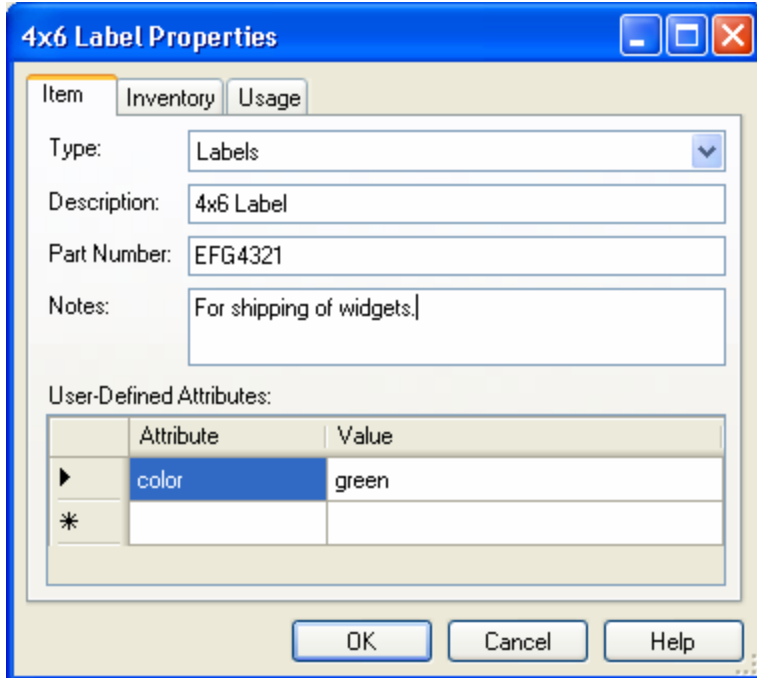
Most printers have “label out” and “ribbon out” detection built into their hardware. Furthermore, almost all of these printers will transmit at least a “printer offline” message that our drivers can see, and some printers transmit a more detailed message than that. However, very few printers actually contain built-in hardware for the detection of “low” (rather than “no”) media. Fortunately, as long as Printer Maestro knows the initial lengths of your rolls of ribbons and labels, you can receive alerts *before* you run out! It’s as if all of your printers have suddenly been upgraded to have “low media” detectors and advanced messaging functions!



*Media usage tracking in combination with alerting can make any printer seem as if it has built-in low media detection.*

### *Inventory Control*

As exciting as the Printer Media Usage Tracking function is in Printer Maestro, you wouldn't want to enter the label and ribbon lengths into the software every time you put new media into your printer. Fortunately, you can save these settings permanently by defining "parts" using Printer Maestro's Inventory Control feature. Your different label and ribbon types and the "low" levels at which to issue warnings only need to be entered and saved once, after which you can use them over and over again.



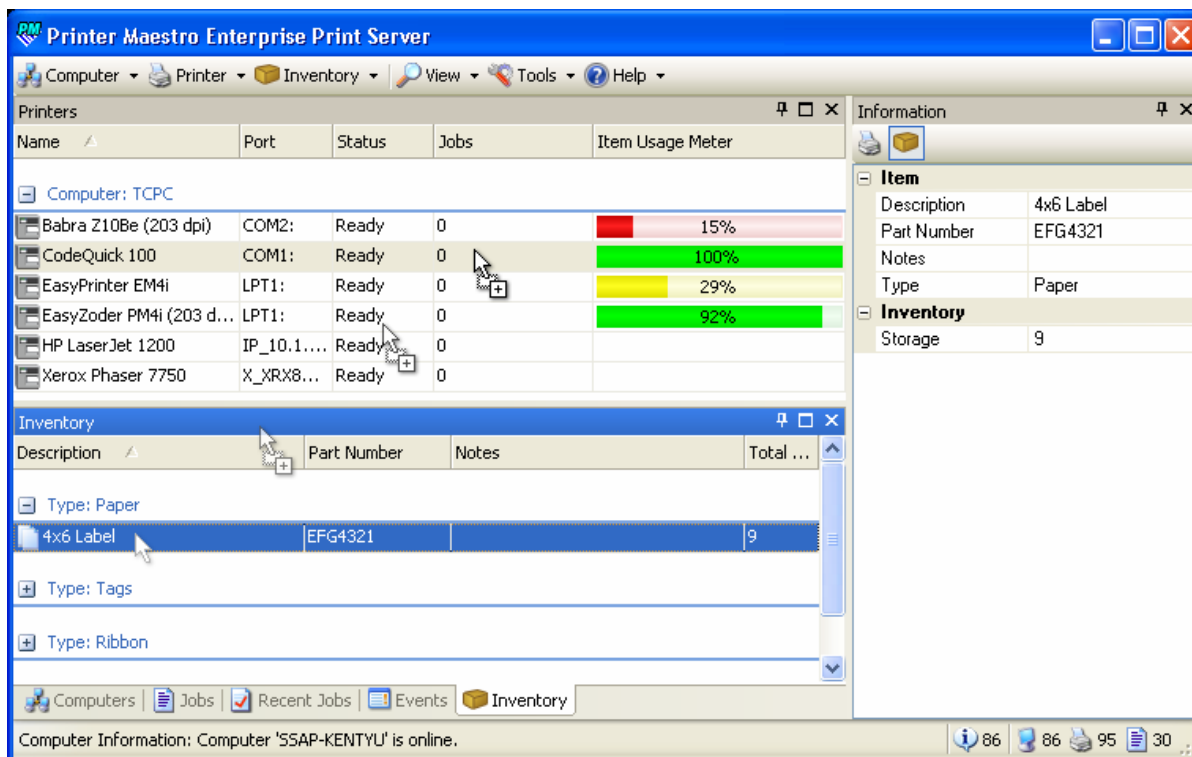
*Enter your media parameters into Printer Maestro's Inventory system just once to define new parts and save these settings for future use.*

But this is only the beginning. In fact, the savable printer part descriptions in Printer Maestro have been implemented as part of an inventory control system especially dedicated to managing printer parts and supplies.

### ***Incredibly Easy to “Drag” Parts into Your Printers***

If you use a driver to query a printer, some (but by no means all) of them can tell you through their digital interface how much memory they have and which font cartridges are installed. However, they don't output messages such as “installed memory has been increased to 1 gigabyte” or “new print head has been installed.” That means that you have to perform an action within Printer Maestro to ensure that the parts inventory levels in your storerooms are properly reduced as you consume inventory. This just couldn't be easier, since you simply use your mouse to “drag” the desired item out of a “Storeroom” and into your printer in seconds.

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*After changing labels in your printer, simply “drag” the desired inventory item from your “Store Room” into your printer to restart Media Usage Tracking at the correct level.*

### ***Multiple Storerooms***

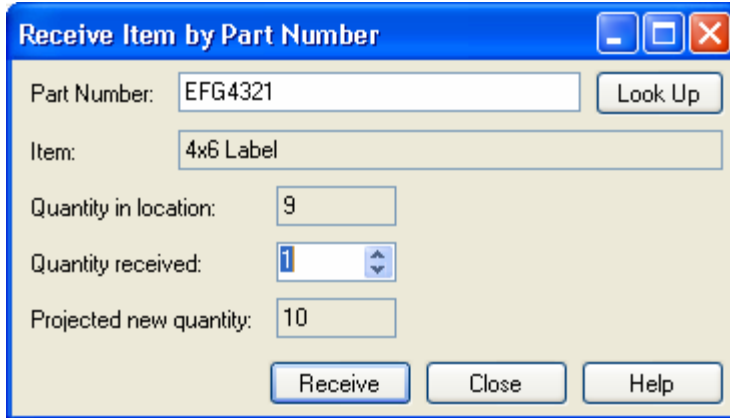
Define multiple storage locations in which to house your printer parts and supplies and easily transfer parts from one storeroom to another.

### ***Track Any Printer Part***

The Inventory Control feature can track *any* printer part, not only parts that are consumed by the printer. So, if you want to track inventory levels of memory modules and font cartridges in your Printer Maestro “storerooms” you can. What’s more, in combination with the Usage Tracking feature, if you want to not only track inventory levels of print heads, but actually track how many inches of label have gone past the print head installed in your printer, you can do that as well.

### ***Bar Code Compatible***

If your received parts are barcoded, our “Receive by Part Number” dialog has been designed to let you enter the parts into your digital “storerooms” just by scanning the bar codes. Scan as many parts as you want, one right after the other, all without having to press any keys or even touch your mouse.



*Easily scan in the bar codes of received parts without having to press any keyboard keys or move your mouse.*

### ***How Bar Code Readers Work with Software***

If you are familiar with label printing but not bar code reading, the following quick primer will help you to better appreciate the bar-code-friendly design of the “Receive by Part Number” dialog.

One of the really convenient things about the way bar code readers are used with PCs is that the data you scan typically enters into your computer programs exactly as if you had typed in the characters at your keyboard. (Most bar codes readers are usually configured to also add an automatic carriage return or tab to the end of the data.) That means that, as far as your software systems are concerned (including Printer Maestro), there is basically no difference between typing in characters and scanning in bar codes. (The main advantage of bar code readers has always been how fast they are and the fact that they don’t make typographical errors.)

The fact that most bar code readers simulate keyboard-based data entry makes it easier to design software that easily accepts characters entered from both keyboards and bar code readers. However, some data entry screens require you to take your hands off of the keyboard and use your mouse in order to finish data entry of one part and/or begin data entry of the next one. Unfortunately, such a system is going to demand the same actions when you use a bar code scanner. That means that, for each received item, the rapid-fire convenience of your bar code system would be combined with the laborious movements and clicks of your mouse. Obviously, this would nullify a lot of the performance advantages of having a bar code system in the first place. With the “Receive by Part Number” dialog described in the previous section, you can scan the bar codes on multiple received items one right after another without having to touch your keyboard or mouse in anyway whatsoever.

Please read the [Printer Maestro Overview](#) earlier in this chapter to see which features are available in which editions.

### **Print Job and Event Logging**

BarTender has been able to access external databases for years. In fact, BarTender was the very first label program to support Microsoft's ODBC ("open database connectivity") driver standard. However, up until now, this data access functionality has always been for the purpose of reading label data from other software *into* BarTender. Now, with version 9.0, BarTender introduces a whole new type of database functionality dedicated instead to logging important print job information, application events and messages into an external database. The "BarTender System Database" can store events and messages from most of the applications in the BarTender Label Management Suite, including BarTender, Commander, Printer Maestro, and Seagull License Server. With the Enterprise Print Server edition of BarTender installed, Printer Maestro can also log printer and print job events from any Windows application into this same database.

### *New and Improved Logging Capabilities*

Available in all of the Enterprise editions, the capability of logging to a database makes it easier for BarTender 9.0 to deliver:

- **More Detailed Logging:** Just about any type of information you can imagine about a print job can now be logged.
- **Greater Versatility:** More flexible organization, easier sorting, and quicker access to the stored information.
- **Superior Data Security:** Databases are inherently more secure than text files. Furthermore, SQL Server can be set up and configured for compliance with the C2 data security standard.
- **Easier Audit Response:** When you have to endure either internal or external security audits, the companion History Explorer application makes it easy to find the logged information that you need to review.
- **Huge Storage Capacity:** Very large amounts of information can be logged, including (if desired) graphic images of every printed label.
- **Easy Label Reprinting:** All or part of a past label job can be reprinted, even if the original label data has been deleted. (The very same stored data that allows for easier security audits also ensures that BarTender can access the data required to reprint your labels.)

### *The Three Types of Logged Information*

Although there are many possible uses of the information stored in the BarTender System Database, the stored information falls into three general categories.

- **Print Job Information:** This includes information such as when a print job was generated, the number of labels printed, and the label format that was used. (To guard against possible label format changes, you can store not only the name of the BarTender label format, but the actual label format itself.)
- **The Label Data Used:** Optionally recording the actual label data used allows for easy reprinting of any damaged labels and quick response to security audits. You can even store graphic images of what each label looked like (although this option can consume space more quickly in the BarTender System Database than other BarTender logging functions).
- **Application Event Messages:** The recording of errors and warnings encountered during the print job is especially helpful when you are trouble-shooting possible problems with BarTender being controlled (or “automated”) from within other programs. In addition, the Enterprise Print Server edition of Printer Maestro can log printer and print job events from *any* Windows application (not just BarTender).

### *Some Limitations of Logging to a Text File*

To help us better understand how logging to a database is so well-suited to print job and event logging, let's first consider some limitations of logging to text files, which is the method BarTender depended on prior to version 9.0. (In support of users that have already designed label management systems around prior versions, BarTender retains its text-based logging capabilities.)

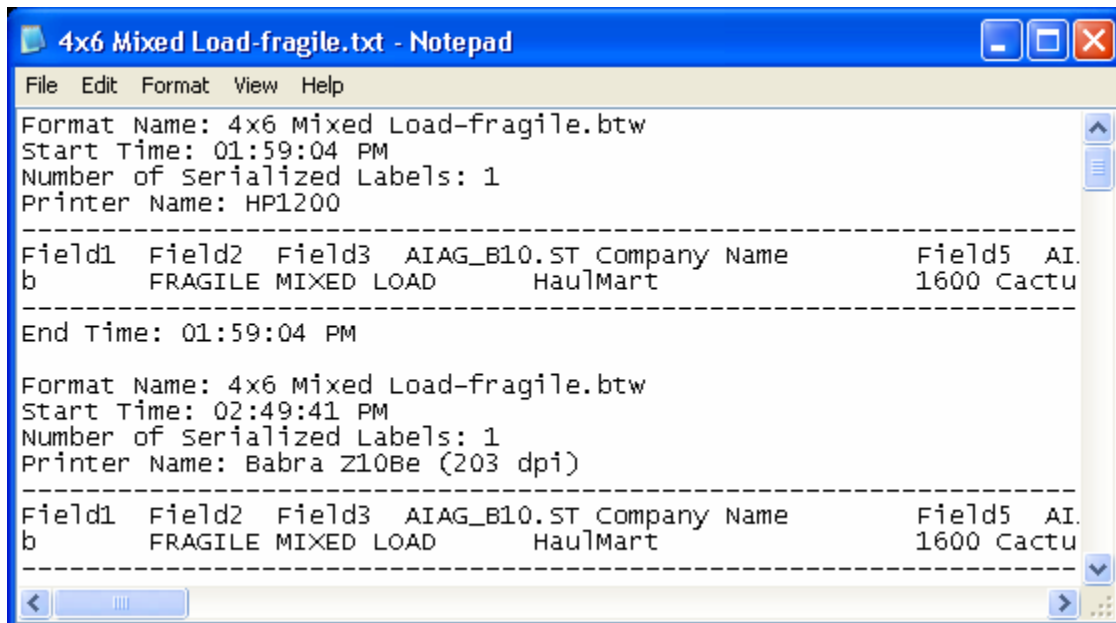
#### ***Text-Based Logs can be Awkward to View***

It is easy to open and view text files using a word processor such as MS-Word, or even a simple text editor such as Notepad. However, such tools are not ideally suited for the viewing of event and data logs. For example, in MS-Word, longer lines of text in the log will “wrap” to the next line, which can create a disorganized and harder-to-read appearance. Alternatively, when viewing using Notepad, lines may run past the right edge of the screen view, requiring you to repeatedly scroll left and right in order to view all of the data.

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```
. Format Name: 4x6 Mixed Load-fragile.btw
. Start Time: 01:59:04 PM
. Number of Serialized Labels: 1
. Printer Name: HP1200
.
. -----
. Field1 Field2 Field3 AIAG_B10.ST Company Name Field5 AIAG_B10.ST Address
. 1 Field7 AIAG_B10.ST City Field9 AIAG_B10.ST State Field11
. AIAG_B10.ST Zip Code AIAG_B10.SF Company Name Field14 AIAG_B10.SF
. Address 1 Field16 AIAG_B10.SF Address 2 Field18 AIAG_B10.SF City
. Field20 AIAG_B10.SF State Field22 AIAG_B10.SF Zip Code Field24 Field25
. Field26 5S Field28 Field29 V Field31 AIAG_B10.Part Number
. AIAG_B10.Supplier
. b FRAGILE MIXED LOAD HaulMart
. 1600 Cactus Ave SE
. Bellevue WA 98007-6848 Widgets International
.
. -----
. End Time: 01:59:04 PM
.
. Format Name: 4x6 Mixed Load-fragile.btw
. Start Time: 02:49:41 PM
```

*Text-based logs displayed in MS-Word can wrap awkwardly, making the data harder to view and understand.*



The screenshot shows a Notepad window titled "4x6 Mixed Load-fragile.txt". The text content is identical to the previous image, but the text is wrapped to fit the window width. The horizontal scrollbar at the bottom is active, indicating that the text extends beyond the visible area of the window.

```
4x6 Mixed Load-fragile.txt - Notepad
File Edit Format View Help
Format Name: 4x6 Mixed Load-fragile.btw
Start Time: 01:59:04 PM
Number of Serialized Labels: 1
Printer Name: HP1200
-----
Field1 Field2 Field3 AIAG_B10.ST Company Name Field5 AI.
b FRAGILE MIXED LOAD HaulMart 1600 Cactu
-----
End Time: 01:59:04 PM
Format Name: 4x6 Mixed Load-fragile.btw
Start Time: 02:49:41 PM
Number of Serialized Labels: 1
Printer Name: Babra Z10Be (203 dpi)
-----
Field1 Field2 Field3 AIAG_B10.ST Company Name Field5 AI.
b FRAGILE MIXED LOAD HaulMart 1600 Cactu
-----
```

*Text-based logs displayed in Notepad will often run beyond the edge of the display screen, forcing you to scroll back and forth to see desired data.*

### ***The Displayed Format within Text File Logs is Not Easily Changed***

Text editors also do not allow you to prioritize what information you want to see when viewing a log. To see only certain information, you would actually have to stop logging the information that you don't wish to see. This is obviously a problem if you change your mind about the data you want to view once the job has already been printed.

### *Tracking Information for Multiple Jobs is Harder with Text Files*

When logging to a text file instead of a database, BarTender gives you the choice between adding to an existing text file or creating a new one in the same folder. That means that you will eventually face one of these two record-keeping challenges:

- **Multiple Text Files Complicate Searching:** If you choose to log each BarTender job to a new text file, then you have to manually use Windows Explorer to search through your Windows output folder by date until you find the file(s) that you want.
- **Text File Logs are Limited in Size:** If you instead log to a single text file that grows in size with each label job, that file will eventually begin to load very slowly (and then not at all) using a text editor.

In contrast to the above two options, Microsoft SQL is designed to allow storage of many gigabits of information and easy searching through that information. Furthermore, once your database is set up for the first time, the number of stored tables does not increase.

### *Lack of Automatic Maintenance for Text File Logs*

Whether you choose to store multiple text file logs within a single folder, or store everything in a single, ever-growing text file, you will eventually need to perform some sort of “maintenance.” That is, you would need to either delete the very oldest text files or the very oldest content within the single large file. Whichever way you go, you would likely have to perform the task manually. In contrast, when using a SQL database, discarding the oldest information is a routine operation that can be scheduled for automatic execution.

### *Text Files Logs are not as Secure as Databases*

The average user of a typical Windows setup knows how to use a word processor to open text files and make modifications. And, of course, you can delete a text file log without even opening it, just using Windows Explorer. Windows offers a number of security measures that can somewhat improve the security of text files, but it is not nearly as flexible and powerful as the security options offered by a database such as Microsoft SQL.

### *Version 9.0 Provides More Detailed Print Job and Event Logging*

BarTender has for many years had the ability to log numerous label job events and associated label data. Now, the Enterprise editions of BarTender 9.0 expand the scope of what is logged by recording:

- Copy of the label format
- Image of the printed label
- Print job status

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- Computer name
- User name
- Additional printer details
- Additional BarTender print settings details

### *New Utilities Provide Easier, Better-Organized Viewing of Logs*

Not only is the logging detail increased in BarTender 9.0, but the logged information is much more easily retrieved and viewed due to the introduction of two of the new modules in the BarTender Label Management Suite:

- The History Explorer
- The BarTender Reprint Console

(More detailed information is provided in later sections of this document.)

### *Understanding Some Important Labeling Security Concerns*

Although bar code and RFID tracking systems can reduce fraud and the accidental loss of vital and sensitive parts, they are only useful when:

1. The correct labels have been generated in the correct quantity of parts with the correctly printed text and bar codes (and/or the correctly encoded RFID data).
2. The labels have been affixed to the appropriate items.
3. The labeled items have been scanned into the tracking system.

Unfortunately, without a means by which to reliably check exactly which labels were printed and when, manufacturing, warehousing and distribution operations are potentially vulnerable to fraud before the goods have ever even been labeled and scanned into the system.

### *The Simplest Security Breach*

To understand just how fundamental the labeling security challenge is, consider that (without the right protective measures in place), a user could go to a software program's "Print" function a second time and simply generate a new, duplicate set of labels. These could be used for a variety of illicit purposes.

### *The Vulnerability of Print Job Logs*

One purpose of logging print jobs is to keep track of who printed what labels and when. However, if a user's label software is logging to text file, we have already mentioned that it does not take much expertise to open that text file and modify it. Or, the entire log could simply be deleted altogether. It takes somewhat more expertise to view, modify and/or delete information from a database. However, a user can still erase his tracks if he has the

right security rights and expertise to manually modify the log. Fortunately, Microsoft SQL offers some basic countermeasures against this type of mischief.

### *Why Simple Print Job Logging Can Actually Make Security Worse*

Consider that BarTender is often set up to be controlled by other software packages. This means that it is possible for BarTender to read label data and print in a completely automated manner, even though the label data source is password-protected and not generally available for viewing by people. Any such security measure could be weakened if the print job information being logged actually includes the data that is used in the label jobs. In particular, if the print job log is not *also* password-protected, then unauthorized users might be able to access label data that is otherwise “locked down” by the application controlling BarTender.

### *Logging to a Database Provides Greatly Improved Security*

The use of a database instead of text files does more than just allow the logging of new types of information and simplify the subsequent retrieval of that data. The new logging system in BarTender 9.0 is built upon the Microsoft SQL database platform, which has been designed with a variety of high-security features:

- **User Login Rights Required:** In order to view the data at all, you need the appropriate login rights.
- **Special Tools Required for Editing:** As with most databases, you cannot just open the log with a text editor. Instead, you have to connect to the database using an appropriate driver and view the data using special tools.
- **Internal MS-SQL Logging Options:** Just as BarTender has logging options, Microsoft has designed its own logging functions into the SQL Server database that satisfy the auditing requirements of the USA Defense Department’s “C2” Security standard. With the appropriate SQL logging options enabled, SQL will log every change made within the system and who made the change. Even simply viewing the data can be logged. No security system is perfect, but these options make it a lot more difficult to misuse BarTender’s event logs without leaving behind evidence.

### *Ideally Suited to High Security Labeling Environments*

The security functions available with Microsoft SQL allow BarTender 9.0 to provide audit-sensitive users with a high degree of confidence that they can offer inspectors correct, detailed records of exactly when a given label job was generated and what label data was printed. Even special events, such as a label job being suspended and later restarted to allow replacement of the ribbon or label stock are recorded in the BarTender System Database and are easily reviewed using the History Explorer application (discussed later). To fully appreciate just how

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powerful this security protection is, consider that History Explorer allows you to review and reprint your past label jobs under every one of the following circumstances:

- Even if the database data originally used for the labels has been modified or deleted.
- Even if the label data was never read from a database. (For example, it might have been manually typed into the label format and then abandoned without saving.)
- Even if your label references a “serialized” data field whose starting value is now different than it was at the time of the original label job.
- Even if the BarTender label format has been modified or deleted.
- Even if the BarTender label format was never saved in the first place. (That is, even if the format never existed outside of a BarTender design session and never got saved.)

In other words, if a label got printed and you can be reasonably confident that your SQL database has not been altered by a very high-tech intruder, then BarTender's print job logging can reliably show you *every single label that could possibly have been printed*.

This increased security means that BarTender's logging capabilities are now ready for the most security-sensitive applications, including:

- **Military:** Due to the dangerous nature of some of the items, and the high degree of secrecy sometimes required, military manufacturing and distribution environments simply must be able to account for exactly what labels they printed and when.
- **Pharmaceutical:** Similar security needs exist in the pharmaceutical industry. Among the hundreds of thousands of drugs that are manufactured and sold each year are a large number of controlled substances with an attractive black market value. Unauthorized label production can also be the basis for drug counterfeiting. Reliable tracking of the distribution process all the way back to the moment of manufacture minimizes is a vital countermeasure to these illicit activities.
- **Chemical:** Amidst the thousands of poisons, explosives and even radioactive substances, reliable and secure tracking within the chemical industry is essential.

These are three of the most obvious applications that demand secure logging of label print job information such as that provided with BarTender 9.0. However, *any* distribution and tracking environment that simply cannot tolerate the accidental or intentional redirection of goods has to do more than rely on bar codes and RFID tags to ensure that products are being properly handled. The Enterprise editions of BarTender help make the initial labeling process itself more secure, even before the first label has been scanned.

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### *Message Logging Supports BarTender Integrations*

We have already discussed the importance of securely logging label data. However, it is also important to be able to log any warning or error messages that may be generated during a print job.

If you happen to be sitting in front of your computer and are manually using BarTender to execute a label print job, you may see warning or error messages under certain circumstances. These can range from a simple warning that might adversely affect the appearance of a label object to a serious error that prevents the job from continuing. In contrast, whether a message is a simple warning or a critical error, BarTender will not attempt to display it on screen when it is being controlled from inside of other software. This is because BarTender will be running invisibly and it doesn't make sense to wait for an "Okay or Cancel" dialog that nobody has any chance of seeing.

The most common message handling option, when controlling BarTender from within other software, is to simply log the messages to a database. At your option, you can also have BarTender, Printer Maestro or Commander e-mail you when an event message is generated. Then, after the print job is finished, you can easily use History Explorer to examine any messages in detail. (See later section for [more detail on History Explorer.](#))

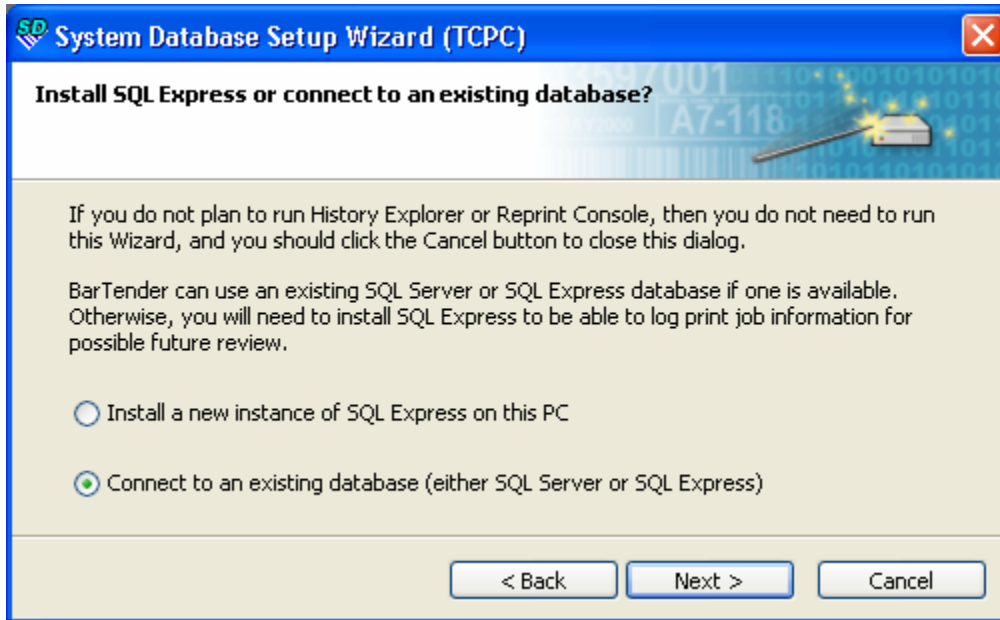
## ***New Internal Database System***

The powerful new print job and event logging functions provided by the BarTender Label Management Suite are designed around support for Microsoft's SQL database platform. As long as users have the appropriate administrative rights, they can take advantage of any SQL Server on their network. However, for users that don't have a copy of SQL Server installed (or don't wish to make one accessible for use by BarTender), BarTender 9.0 is also compatible with Microsoft's "SQL Express" database system. This is basically a free SQL "lite" system designed by Microsoft to give users and applications many essential database capabilities, but without the full power (and cost) of a complete SQL Server system. Some of the limitations of SQL Express include:

- A maximum of 4GB of data storage.
- Can only use a single CPU. (That is, it cannot take advantage of the increased performance possible with dual and quad core CPUs.)
- Does not have advanced functions such as scheduling, database replication, and data transformation services (DTS).

### *New BarTender System Database Setup Wizard*

The first time an Enterprise user attempts to take advantage of one of BarTender 9.0's new database logging functions, the BarTender System Database Setup Wizard is automatically launched. Users are asked if they wish to use to an existing Microsoft SQL Server to house BarTender's System Database or instead download and install a copy of Microsoft's SQL Express.



*The BarTender System Database Setup Wizard lets you install a new copy of SQL Express or connect to an existing copy of SQL Server.*

### *Sharing a Centralized Database*

Only the Enterprise Print Server edition of BarTender allows multiple network users to share a single print log database within one installed copy of Microsoft SQL Server. (Although it is also possible for multiple copies of the BarTender Enterprise Print Server to share a single copy of Microsoft's free SQL Express database, we do not recommend this configuration due to the limitations described in the previous section.)

### *Using Stand-Alone Databases*

Each installed copy of an Enterprise or RFID Enterprise edition of BarTender can only log to a local database. (Only the Enterprise Print Server edition supports logging to a common, shared database.) There is nothing to prevent a user from allocating a separate copy of Microsoft SQL Server for each individual copy of BarTender installed on a network. However, for most users, this is an overly expensive and complex solution. A convenient and cost-effective solution to the stand-alone database configuration is to install Microsoft SQL Express on multiple computers as required. (SQL Express is available for free from Microsoft's web site.)

### *Benefits of a Shared, Centralized System Database*

As just described, multiple installed copies of the Enterprise Print Server edition of BarTender can optionally share a print log database in a single, centralized SQL Server. That means you can:

- From any workstation on a network, use a single screen inside the History Explorer (see next section) to inspect *all* of the print job and event log information generated by *every* copy of BarTender installed on the network.
- View a combined list of the application messages generated by numerous network copies of the BarTender Label Management Suite in the order the messages were generated. (Alternatively, you can or resort the logged data according to which computer or printer was used for the print job.)
- Submit a label reprint job to a copy of BarTender running on any computer on the network, regardless of where the job originated.

In contrast, when using the “lower” Enterprise editions, each copy of History Explorer and Reprint Console would only be able to view the local logs generated by the copy of BarTender running on that same workstation. Also, you would only be able to submit label reprint jobs to the local copy of BarTender.

### **The “History Explorer”**

As we have already discussed, either Microsoft SQL Server or SQL Express can be used by the BarTender Label Management Suite to store logged print job information and event messages. However, whichever one you use, you also need a tool that can perform intelligent searches of the logged information and display the results in an organized manner.

Prior to the debut of version 9.0, BarTender performed all logging of print job information and event messages to text files. (For some additional details on logging to a text file in comparison to a database, please see the earlier section called “[Print Job and Event Logging](#).”) Because text files are easily viewed with text editors such as Notepad or MS-Word, BarTender did not previously need a dedicated “viewer” for examining logs. Now, however, with the data-based logging options offered by version 9.0, a new type of viewer is required because:

- Microsoft SQL Server (and even SQL Express) is capable of storing far more information than any general purpose word processor can load.
- A database of *any* size has a different type of structure from what text editors and word processors are designed to load.

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- Finally, word processors don't let you easily examine and change between multiple views of the same data depending on your needs.

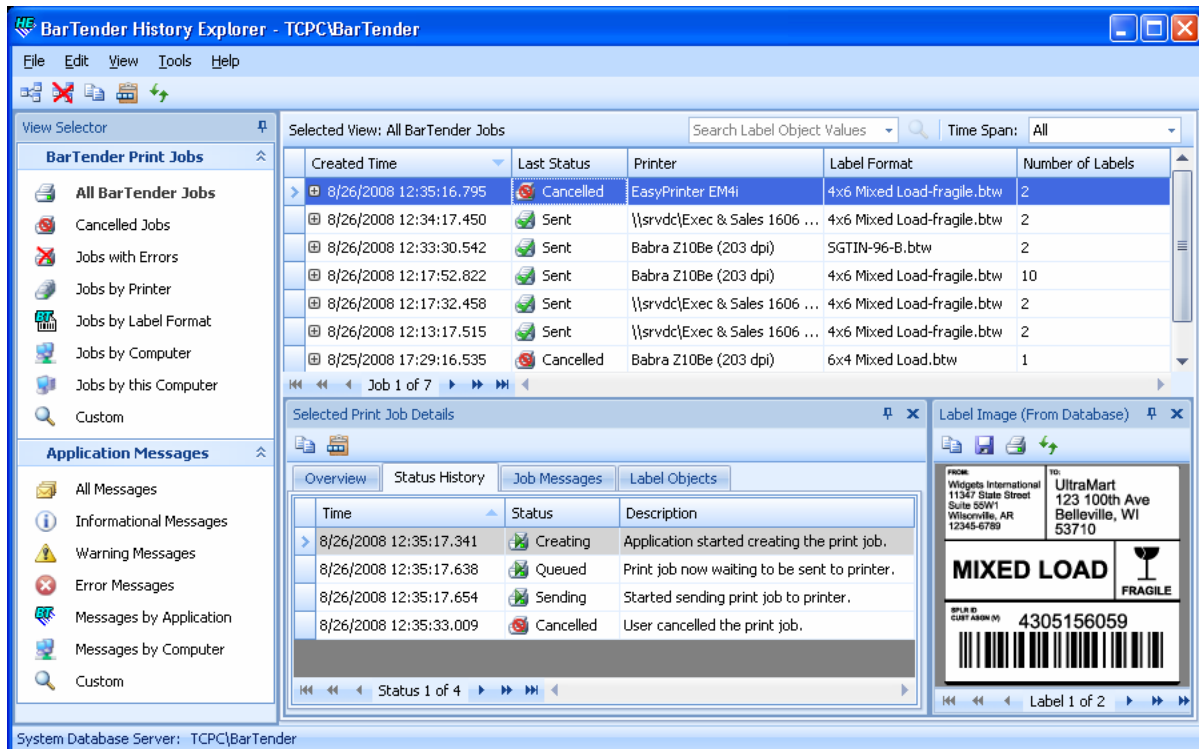
These are some of the reasons why, starting with version 9.0 of BarTender, Seagull now offers its own data viewer called History Explorer. Whether you need to respond to a security audit or simply validate that a print job ran properly, History Explorer makes it easy to find the print job information and event messages you are looking for and view and sort the data in a variety of different ways.

### *An Overview of History Explorer*

History Explorer is an extremely flexible but easy-to-use data viewer especially designed to display print job information and application messages logged by the BarTender Label Management Suite. It is used to:

- **Navigate** through the BarTender System Database in search of specific print job information and event messages from any program in the BarTender Label Management Suite (which includes BarTender, Commander, Printer Maestro and Seagull License Server).
- **View, sort and inspect** print job information and event messages.
- **Reprint** lost and/or damaged labels. (In addition, the companion Reprint Console application, discussed later, provides print job navigation and label selection especially designed to handle label reprinting.)

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*History Explorer lets you navigate through past print jobs and easily customize the view of your data.*

Each display “pane” in the History Explorer window easily can be resized and/or “floated” over the other panes, allowing you to totally customize how you view your print job and event history. The function of each of these panes is summarized in the following sections.

### *The View Selector Pane*

The **View Selector** seen along the left-hand column of the previous screen image has two obvious sub-sections, one for each of two very different types of data views:

- **BarTender Print Jobs**, which shows print job data, label images and statistics.
- **Application Messages**, which shows errors, warnings and other event messages.

Each of the two view types is available with a variety of filters and sorting options defined. For example, among your many predefined options for viewing job data are:

- Select and display *all* print jobs
- Inspect only those jobs with errors
- Examine jobs that originated from a specific computer

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In addition to the available list of preconfigured views, both the **Print Jobs** and the **Application Messages** portion of the **View Selector** have a **Custom** option for designing your own special data views.

### *The Selected View Pane: "Application Messages" Mode*

The vast majority of print jobs finish properly and without incident. However, there are actually a fair number of events that can cause job handling problems that are beyond the control of the BarTender Label Management Suite. For example:

- Your printer could run out of labels.
- A corrupt and therefore unreadable field could be found in a database.
- A database server could go down.
- A network problem could cause a database or printer to seem to suddenly "disappear."

The importance of these and other errors is compounded when, instead of running BarTender manually and sitting in front of the screen while it prints, you control BarTender from inside of other software. These are some of the reasons why you may want to retroactively examine logs to see what if any application messages have been generated.

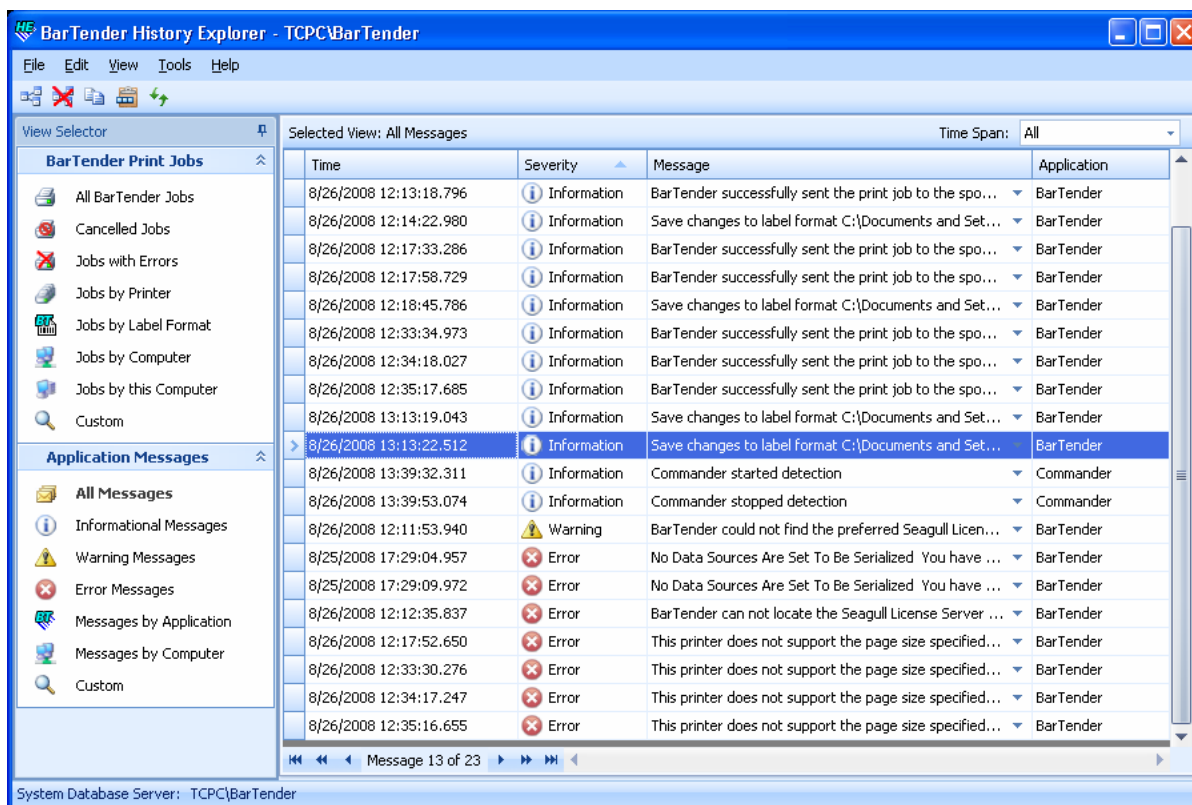
When you select one of the Message options in the **View Selector**, History Explorer fetches a list of application messages from the BarTender System Database and displays them in the **Selected View** pane, which (by default) appears just to the right of the **View Selector**. This is the easiest way to view the details of any errors or warnings that may have occurred during the printing of past label jobs.

There are three types of Application Messages:

- **Information:** This is usually notification of the successful completion of a job.
- **Warning:** This is an event that you might want to know about, such as an object being too big to fit on the label at print time, but that isn't serious enough to cause a print job to terminate.
- **Error:** This is an event that is severe enough to make continuation of a label job impossible.

If you are looking to inspect just trouble conditions, you can easily specify a view of application messages that is limited to just Errors or Errors and Warnings.

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Select one of the “Application Messages” options in History Explorer’s View Selector to display messages logged by any of the applications in the BarTender Label Management Suite.

### “Application Messages” vs. “Job Messages”

We have just discussed the display of application messages in the **Selected View** pane. In a later section, we will also learn about a pane in History Explorer that contains “Job Messages.” To best take advantage of History Explorer, you should understand the difference between these two lists of messages.

#### *Application Messages*

When the **Selected View** pane in History Explorer is in “Application Messages” mode, you will see messages both from BarTender *and* from other applications in the BarTender Label Management Suite. Many of these messages will directly relate to print jobs, but not all. For example, both Seagull License Server and Commander can generate messages in situations where no print job was being processed. (Even BarTender itself generates some messages that are not directly related to print jobs.)

By default, the application messages displayed in the **Selected View** pane will be listed in chronological order. That means that, if you run multiple print jobs from multiple locations on your network at the same time, you will end up with messages from different

print jobs (as well as any non-printing application messages) all mixed together in chronological order. To summarize, “Application Messages”:

- Includes messages from any application in the BarTender Label Management Suite.
- Lists messages that may or may not directly relate to a specific print job.
- Displays messages in chronological order, rather than by print job.

### *Job Messages*

When the **Selected View** pane in History Explorer is set to “BarTender Print Jobs,” instead of the “Application Messages” mode referenced above, you will see a **Selected Print Job Details** pane (discussed later). This pane contains a **Job Messages** tab that, if you only glance at it quickly, may look very similar to the list of application messages described above. However, if you look more closely, you will see that the **Job Messages** tab only displays the messages from the print job that is highlighted in the Selected View pane and that there are no messages at all that relate to non-print-job activity. (A screen shot of the Job Messages tab appears in the associated section later in this document.)

All messages that you see in the **Job Messages** tab will also be displayed in the **Selected View** pane when it is in “Application Messages” mode. However, the converse is not true.

At this time, the **Job Messages** tab only includes messages generated by BarTender during a print job. However, in the future, it may include messages from other applications in the Label Management Suite *if* they directly relate to the selected print job.

### *The Selected View Pane: “Print Jobs” Mode*

We have already learned that historical application messages are displayed in the **Selected View** pane if you select one of the “Messages” options in the View Selector. Alternatively, if you select one of the “Jobs” options in the View Selector, the **Selected View** pane will instead display a list of historical print jobs. (Again, by default, this pane appears just to the right of the View Selector.) By default, the **Selected View** pane will list your past print jobs in the order that they were printed. Simply click on any job in the list to view past label data, label images and additional information in the **Job Details** pane.

### *Extremely Flexible Jobs View*

You can view the displayed print jobs in a variety of alternate ways, including:

- Turn off display of one or more columns
- Add display of more columns

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- Resize any column's width
- Change the order in which the columns are displayed
- Re-sort the display of records according to the data in any one column just by clicking on the corresponding column heading
- Commonly-displayed columns include:
  - When printed. (This is really the time when BarTender started generating the data, which usually occurs *before* the job actually begins printing)
  - The originating computer
  - The user that initiated the print job
  - Final status of the job
  - Name of the BarTender label format used
  - Name of the printer on which the job printed

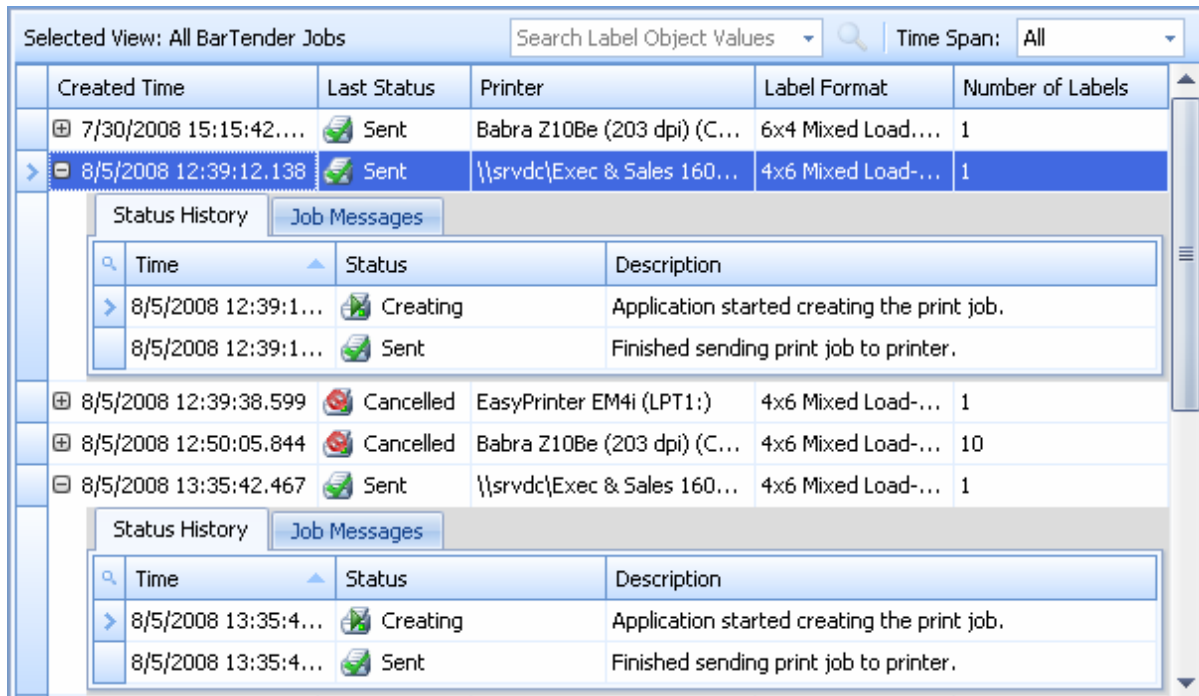
### ***“Drill down” to see Additional Job Details***

At the beginning of each job record displayed in the Selected View dialog is a “+” sign. Click on the “+” to see the following selected details for any print job:

- Status History
- Job Messages

Although these two tabs are also included in the Selected Print Job Details pane, each of the methods of viewing these details can be convenient under different circumstances.

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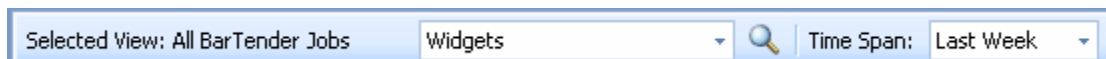


Click on the “+” to drill down into any job record for additional details.

### *Two Ways to Find Labels: Object Value Search vs. Manual Navigation*

In the sections that follow, you will see that there are two different panes that offer “next, previous” style of navigation through a label job. This kind of label navigation is very easy to understand, but if you are looking for a specific label from within a large label job, this could be a slow way to find it. And what if you weren’t even sure in which job the label was printed?

This is not as silly as it sounds. Often, when you integrate other software with BarTender, BarTender is only used to print only one label a time. So, instead of a few label jobs containing hundreds or thousands of labels, you could easily get hundreds or even thousands of jobs, each one containing just a single label. Even if you ran just a single label job per day, you would still have more than 20 new label jobs generated per month. This is why the **Search Label Object Values** option at the top of the **Selected View** pane is so useful. Simply enter a value that you know appears in the label you want to review. History Explorer will then search through every label job in the BarTender System Database (or the subset of jobs being viewed) until it finds all of the jobs that match the desired search string.



*The Label Object Value Search option lets you scan every label object in every label job in search of a specific label.*

## *The Print Job Details Pane*

Once the desired print job has been selected, a variety of additional information will display in the **Selected Print Job Details** pane. Four different categories of information are available, each on a dedicated “tab,” as follows:

### *Overview*

The **Overview** tab summarizes a broad variety of general information about the selected print job and presents it in an attractively-formatted text-based view. The information can be viewed directly and is also easily selected using your mouse cursor for “copy and paste” into an MS-Word or other document.



*The Overview tab provides a general, text-based summary of the selected print job.*

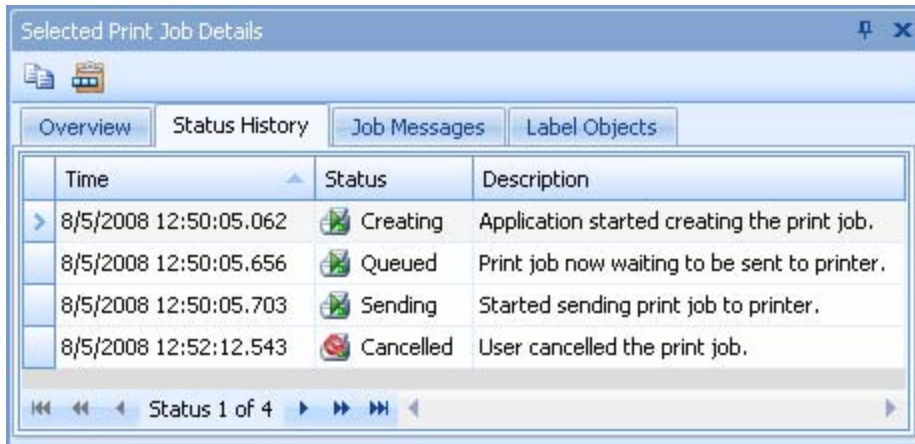
### *Status History*

The **Status History** tab shows the complete printing history of the job, from the time BarTender started the job to the time the printer finished printing the last label. Any interruptions or other critical events will be displayed in this list.

### *Accurately Detecting the Completion of Print Jobs*

It is worth mentioning that most Windows applications only know when a print job finished being sent from the spooler to the printer. In contrast, when you use Seagull printer drivers for which we have implemented status monitoring, both Printer Maestro and History Explorer will also know precisely when the last label in the job actually finished printing.

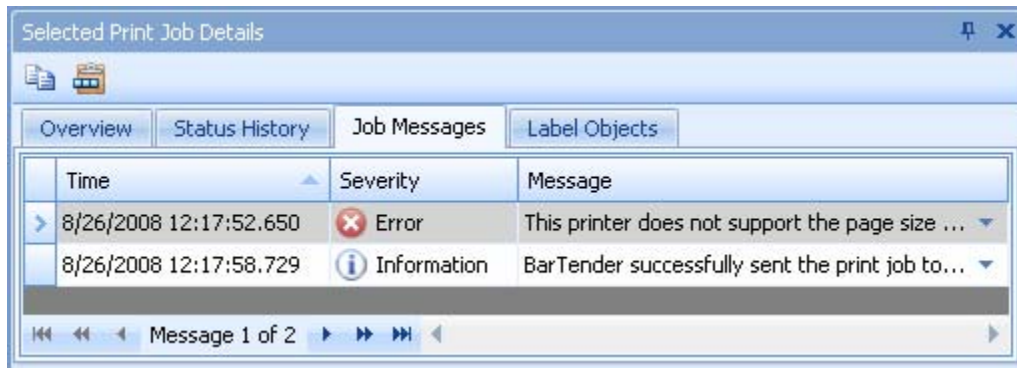
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*The Status History tab displays the printer events for the selected job.*

### *Job Messages*

The **Job Messages** tab displays any warning or error messages that may have been generated by BarTender during a print job. This is especially useful when you are controlling BarTender print jobs from within other software, because automating BarTender suppresses the on-screen display of messages.



*The Job Messages in History Explorer tab displays only BarTender-specific messages. These can also be seen along with other application messages in the Selected View pane.*

### *Label Objects*

The **Label Objects** tab performs two very important functions:

#### *Displaying Label Data*

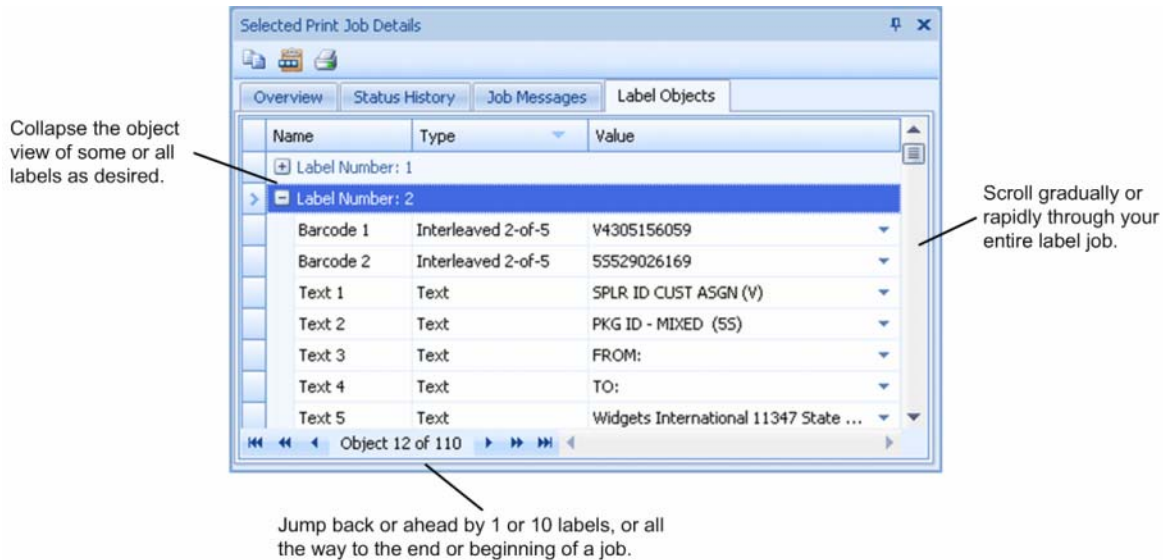
When the **Label Objects** tab is in its normal “expanded” mode, it lists every label object for every label in the job, including the name, type and value of each object.

#### *Label Navigation*

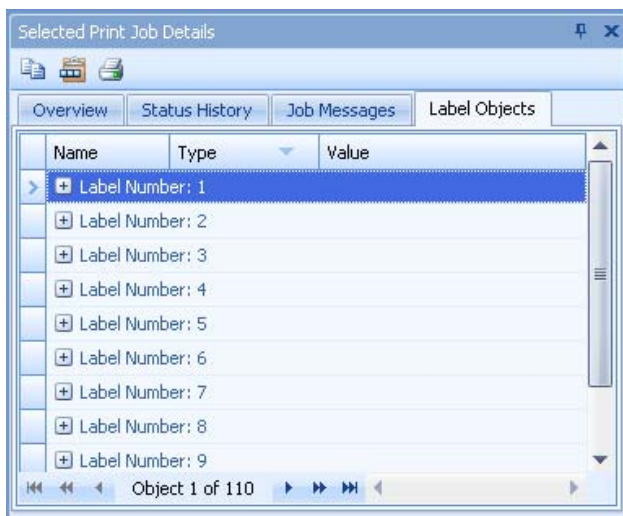
There are two ways to navigate through the records in the **Label Objects** tab:

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- Using the scroll bar column on the right side of the pane, you can move backward and forward through the job just by moving the scroll box (or “thumb”) or by clicking on the up or down arrows at the top and bottom of the scroll bar.
- The other method is to use the “Next, Previous” style of navigation control along the bottom edge of the **Label Objects** tab. In addition to next and previous, you can jump ahead or back by 10 labels at once and also jump all the way to the beginning or end of the job.



Note that if you right-click on any of the label object rows in the tab, you get the option to “Collapse” all of the label data, leaving only the label “headers” displaying the numeric position of each label. This can be useful for some navigation functions.



By “collapsing” all of the label “nodes,” you can more easily see where you are relative to the rest of the label job.

### *The Label Image Pane*

As with the **Label Objects** tab, the **Label Image** pane is used both to display label information and to navigate through the labels in a print job.

#### *Displaying the Label Image*

The **Label Objects** tab described previously provides a textual representation of each object that printed on the label. In contrast, the **Label Image** pane takes us one step further by displaying a graphic image of the label. It looks similar to a photograph of the label, except the label image is *simulated* by BarTender.

There are two ways in which the label image can be generated, depending on whether the “Image of the Printed Label(s)” check box is enabled on the **Tools, Log Setup** dialog in BarTender:

#### *From Image Stored in Database*

When the **Image of the Printed Label(s)** option is enabled, BarTender will generate a bitmap image of each label as it prints and store the image in the BarTender system database. This is the closest you can get to storing a “snap-shot” of each label as it prints without actually installing a camera system. Depending on the complexity of the label and the speed of your computer, this option may affect printing performance. Certainly, storing an image of each label as it prints consumes more space in the BarTender System Database. When viewing print jobs that were logged with this option enabled, the title bar in History Explorer’s **Label Image** pane will say “Label Image (From Database).”

#### *Live Preview*

If you did not enable the **Image of the Printed Label(s)** option in BarTender, then History Explorer will instead generate an on-the-fly “Live Preview” of each label image as needed. This is done by having History Explorer read the label data from the database log and send it to a local copy of BarTender, which then generates a bitmap image and sends it back to History Explorer for display. This reduces the amount of space consumed in the BarTender System Database and shifts the overhead of generating the bitmap image from print time to such time as you attempt to display a given label using History Explorer (or Reprint Console). When History Explorer is using BarTender to generate live previews of label images, the title bar in the **Label Image** pane says “Label Image (Live Preview).”

#### *Navigating the Label Job*

The control at the bottom of the **Label Image** pane lets you jump to the next or previous label, jump ahead or back multiple labels, or jump all the way to the end or beginning of the job. When you navigate to a different label using either of the two navigation views (the **Label Image** pane and the **Label Objects** tab), History Explorer will automatically update the information in the other viewing area to correspond to the newly-selected label.

### *Customizing the History Explorer Interface*

Not just the History Explorer, but the rest of the applications in the BarTender Label Management Suite allow you to customize the layout of your on-screen display. As you have already seen in the screen images included in this white paper, History Explorer is by default organized with:

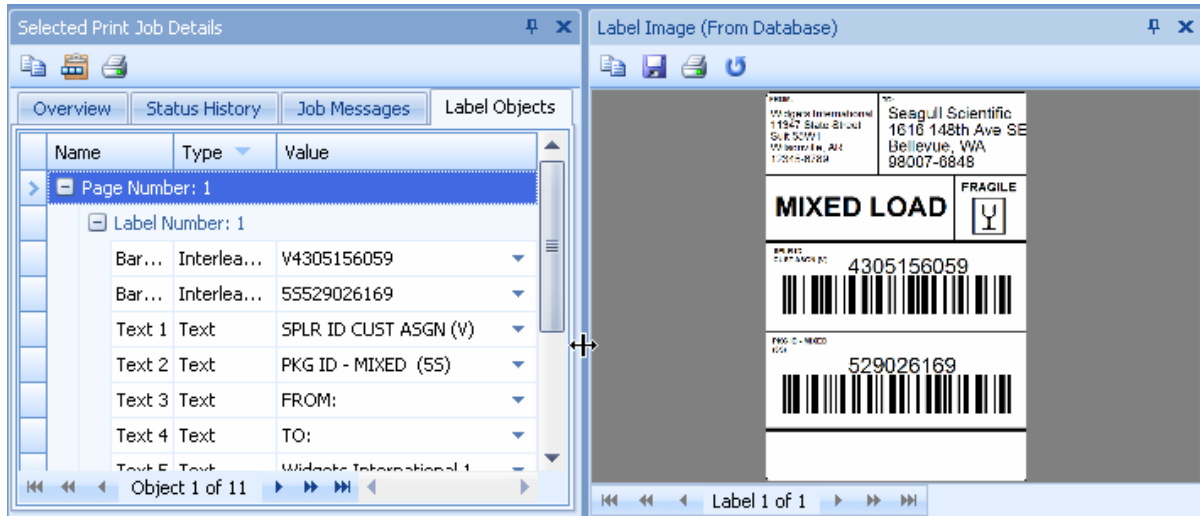
- **Selected View** pane along the top half of the screen.
- **Selected Print Job Details** along the lower left.
- **Label Image** in the lower right.

However, this is just a default configuration. You can easily reconfigure the History Explorer layout to suit your preference. You can make changes such as:

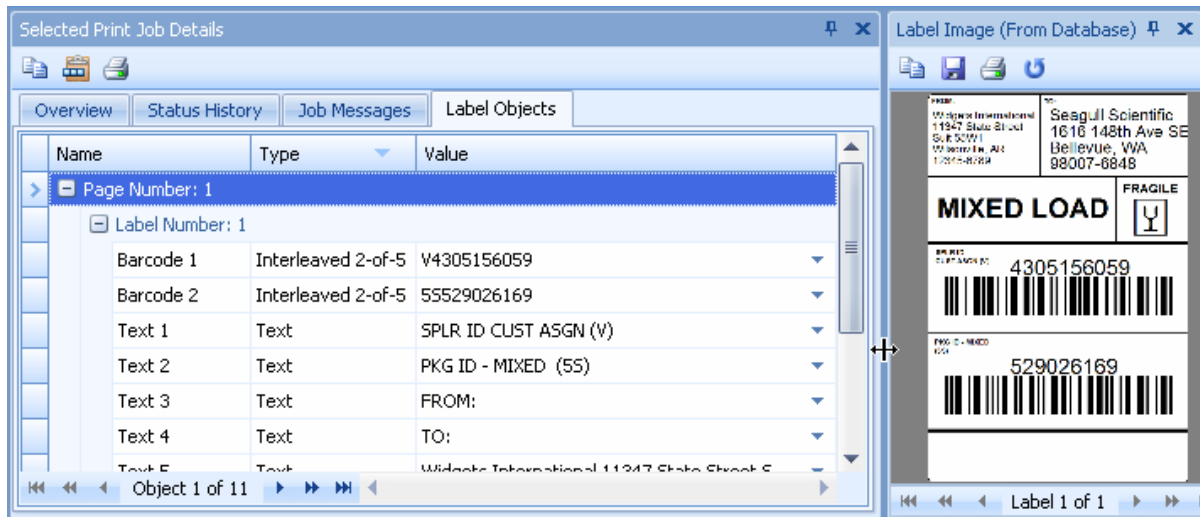
- Shrink one pane in order to increase the size of another.
- Move panes to a different edge or corner of the display.
- Move one or more panes so that they permanently “float” over the other panes instead of “tiling” next to them.
- “Un-pin” a pane so that it “rolls up” into a tab when you aren’t using it. This keeps it out of the way until you hover over the tab to display it again.

(Please see the illustrations starting on the following page)

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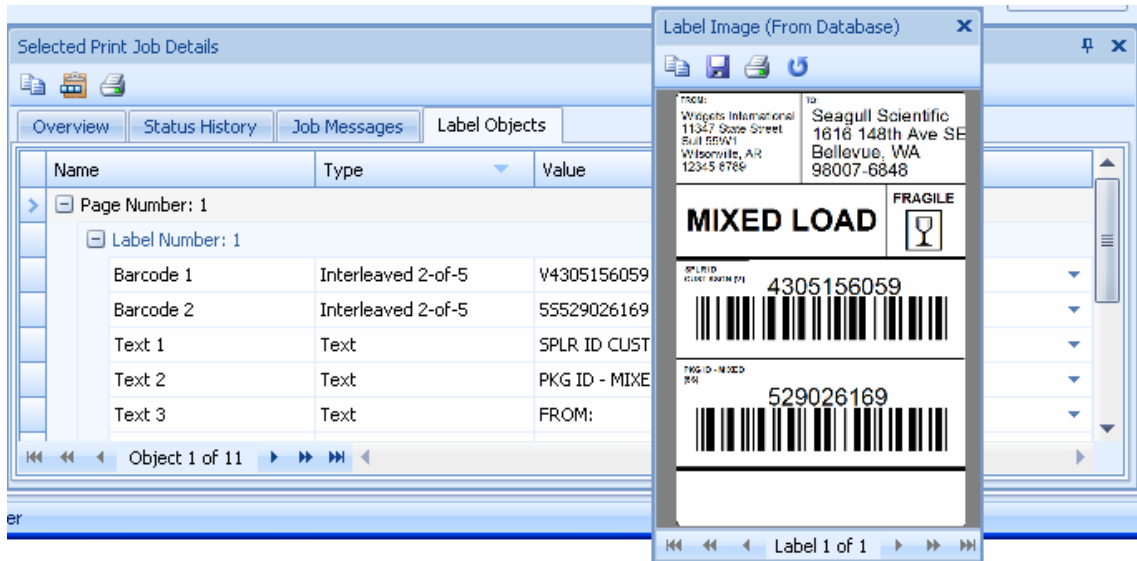


*Easily “grab” a boundary with your mouse pointer to resize both adjacent panes.*

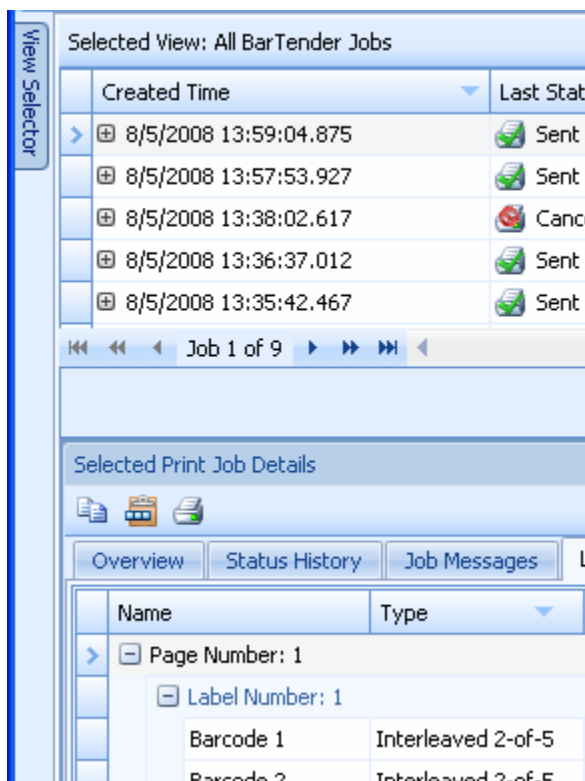


*The two panes after resizing.*

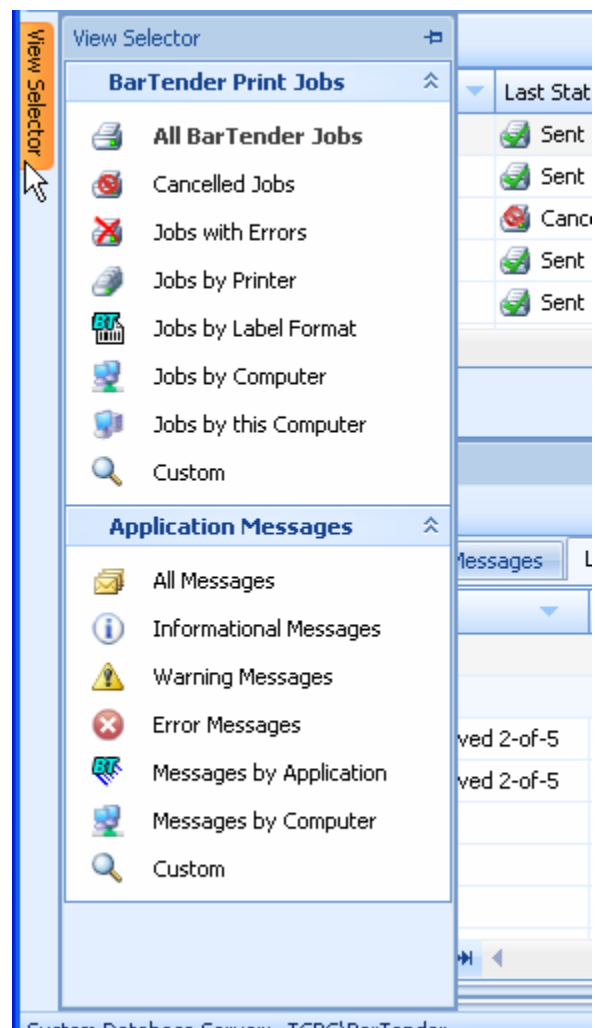
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*You can also move and re-dock panes into different locations on the screen, or leave one or more panes floating over the other panes.*



*You can “un-pin” a pane so that it automatically “rolls up” into a tab when not needed, thereby giving you back valuable screen space. Just “hover” over the tab to roll it back out when needed.*



## Powerful New Label "Reprint" Functionality

Sometimes, one or more of your labels may get damaged, peel off a box, or get lost in some other way. Whatever the cause, two applications in the BarTender Label Management Suite can reprint all or part of past label jobs:

- Reprint Console
- History Explorer

The two applications handle label reprinting somewhat differently and the most convenient one to use will depend on your circumstances.

### *The Benefits of Reprinting from Print Job Logs*

Label "reprint" can be as low-tech as manually executing the Print function again from inside of BarTender. However, the ability to retrieve all of the details of a print job from a database and reprint using the exact, original label data and label format gives us much more powerful and flexible capabilities.

### *Old-Style Reprint Functionality*

When you run BarTender "stand-alone," and relatively little time has passed since you originally printed your labels, you already have about the simplest method of reprinting labels that you could imagine: Simply use BarTender to manually load the desired label format and just print the labels again. (If you are reading your label data from an external database, BarTender already makes it easy to print one, some, or all of the records.)

### *The Main Challenge of the Old Method*

With each hour, week and month that passes since your labels were originally printed, the data in your external inventory database is more and more likely to change. Unfortunately, you simply cannot reliably reprint labels unless you can be sure that you still have access to the *exact original data*.

### *The Next Closest Thing to Time Travel*

Fortunately, regardless of what has or has not happened to the external database that BarTender originally read its label data from, you can be fully confident in the Print Job Log stored in BarTender's System Database. The Print Job Log will contain an *exact* copy of the label data you used, perfectly frozen in time for as long as you want. (The logging of label data requires that BarTender's "Label Data" logging option be enabled) Even the exact BarTender label format (the "BTW" file) that was used can be automatically stored as part of the logging process.

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Reviewing some points from the “Print Job and Event Logging” section earlier in this document, as long as the right logging check box was enabled at print time in BarTender, you can effectively travel back in time to the moment you originally printed your labels and identically print them again:

- Even if the database data originally used for the labels has been modified or deleted.
- Even if the label data was never read from a database. (For example, it might have been manually typed into the label format and then abandoned without saving.)
- Even if your label references a “serialized” data field whose starting value is now different than it was at the time of the original label job.
- Even if the BarTender label format was never saved in the first place. (That is, even if the format never existed outside of a BarTender design session and never got saved.)

### *Especially Helpful when Automating BarTender from within other Software*

The conditions under which BarTender prints labels when being controlled by another program, such as an ERP application, make it particularly helpful to have future access to the original label data in a stored Print Job Log. Besides the fact that the controlling application’s database may change over time, many applications that automatically launch BarTender label jobs do so in response to specific transactions, such as a shipping or receiving event. That means that, if a printed label somehow gets lost or destroyed, it is not acceptable to replace it just by having your manufacturing or warehousing software pretend that you manufactured another part or received more merchandise. If you actually try to “receive” or “ship” a part again without really receiving or shipping it, your inventory levels will be thrown off. In contrast, Reprint Console and History Explorer let you exactly reprint your labels without having to confront any inventory or shipping challenges within your ERP or other inventory application.

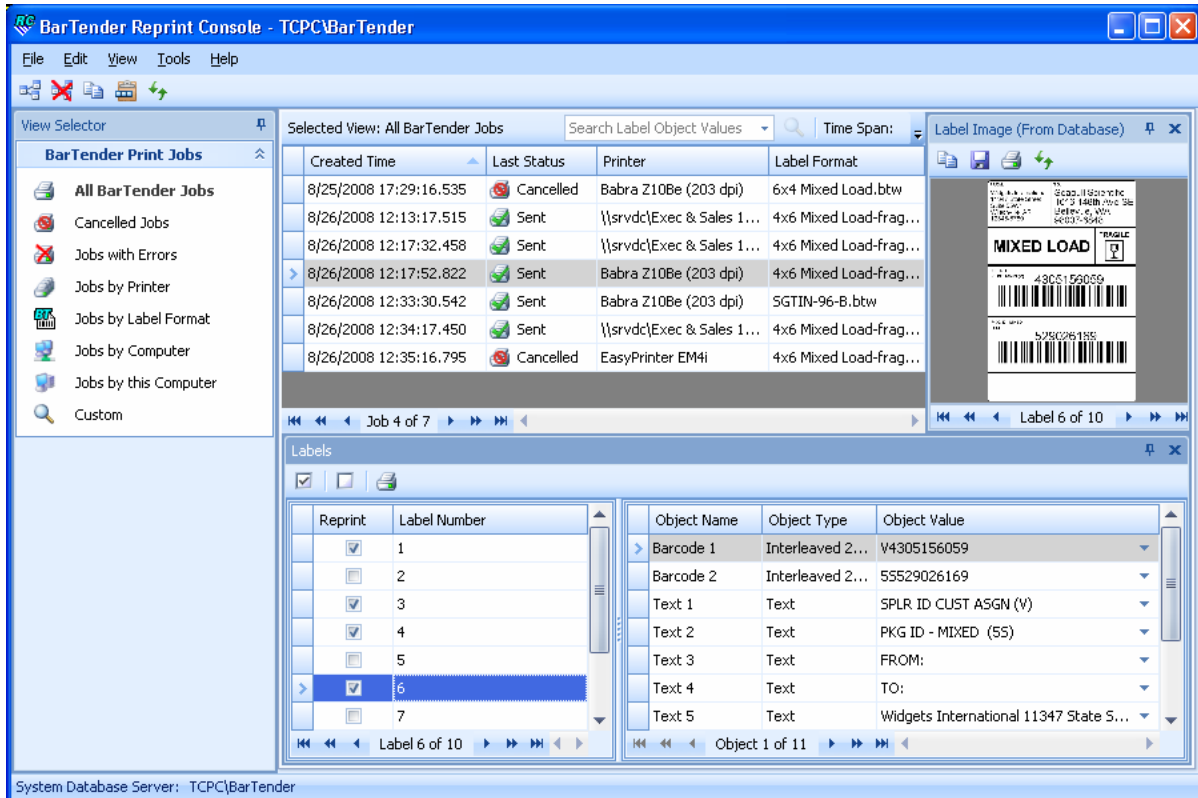
### *Introducing the Reprint Console*

In previous sections, we discussed how History Explorer lets you navigate to any past print job that has been logged to inspect important information about what was printed. You can view the exact label data that was used and even view a simulated picture that very closely resembles what each label looked like. Well, if we can access enough data to generate images of past labels on screen, shouldn’t we be able to print the labels out again? In fact, *we can*.

Although History Explorer has *some* label reprint functionality (discussed in a later subsection), History Explorer is somewhat better-suited to the detailed inspection of print job information and application messages. In contrast, the user interface of the Reprint Console application (available in all Enterprise editions) is 100% dedicated to the reprinting of labels. You navigate through your past label jobs without having to wade through any extraneous

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application message history or other unnecessary print job information. Then, once you find the label job you are looking for, you can easily select *any* combination of labels to reprint.



*The Reprint Console makes it easy to navigate through your logged print jobs to find and select any arbitrary combination of label(s) to reprint.*

### *Similarities to History Explorer*

As you can see in the full-screen image shown above, Reprint Console bears a strong general resemblance to History Explorer:

- Both have a View Selector located (by default) on the left-hand side.
- Both have a Selected View pane along the top that includes a text-based search for label objects.
- Both can have a Label Image view in the bottom right-hand corner that supports label navigation.
- Both can display a pane with label objects to the left of the Label Image view.

### *Differences with History Explorer*

As we've explained, Reprint Console differs from History Explorer in certain ways that favor reprinting:

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- The View Selector no longer contains options for viewing Application Messages because these are not relevant to reprinting.
- The Selected View pane no longer has a mode for displaying “Application Messages.”
- The Selected View pane also no longer has a “+” button for each job record that allows “drill-down” into selected details of the job.
- Whereas the History Explorer combined the label number and the label object data into a single view in the Label Objects tab, the Labels pane in Reprint Console divides the label number and object data information into two separate sub-panes.
- The “Label Number” portion of the “Labels” pane displays a check box for each label. This is the key feature that allows arbitrary selection of any combination of labels from a past job for reprinting.

### *Overview of Reprint Console*

The various panes in Reprint Console are used as follows:

#### *View Selector*

Just as with History Explorer, you can select from a variety of predefined views of BarTender Print Jobs. You can also define a custom jobs view. The Application Messages portion of the View Selector in History Explorer is not offered in Reprint Console.

#### *Selected View*

Once you have selected the desired jobs view, the corresponding print job records will be displayed in the Selected View pane. As with History Explorer, the default display order is defined by when each job printed. Simply click on the job whose labels you want to examine. You can also right-click on any job record in the Selected View pane for the option of reprinting the entire print job.

#### *The Label Image Pane*

The Label Image pane in Reprint Console works exactly as it does in History Explorer. You can use it to:

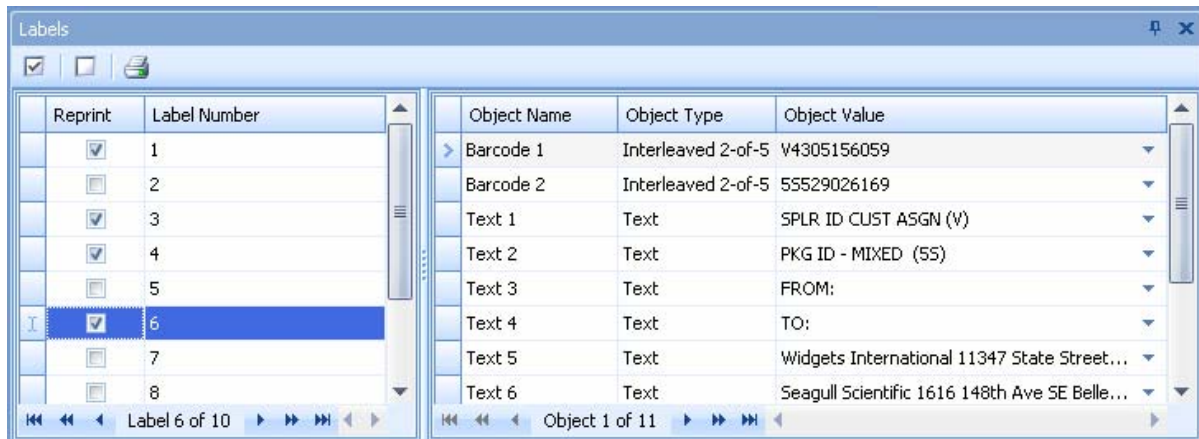
- Navigate to the desired label record in a job.
- Visually inspect the image of the label. (The image is generated by BarTender either at the original time of printing or “live” as you navigate through label jobs.)
- Right-click on the label for the option of reprinting just that label.

#### *The Labels Pane*

The Labels pane is your essential tool for selecting any combination of labels from a past job for reprinting. It is divided into two sub-panes:

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- **“Label Number” Sub-Pane:** Click on any label number to view the corresponding objects for that label in the adjacent Label Objects sub-pane. The image displayed in the Label Image pane will automatically update to agree with the label number that you clicked on. To include a given label in a reprint job, simply enable the check box for that label number.
- **“Label Objects” Sub-Pane:** This sub-pane displays the data for all of the label objects that correspond to the row most recently selected in the Label Number sub-pane or the image most recently navigated to in the Label Image pane.

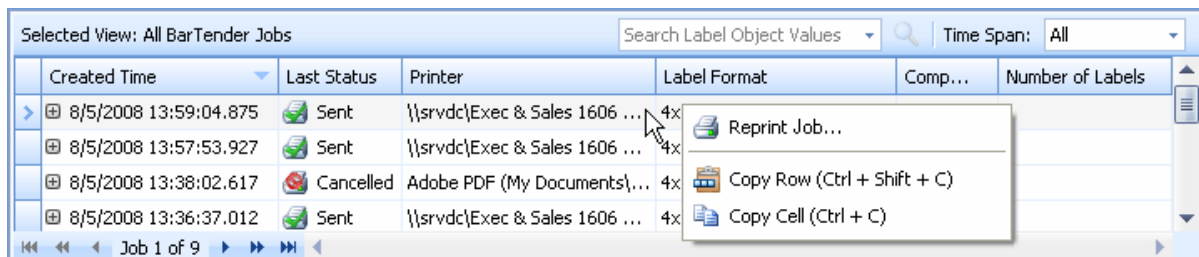


*The Labels pane in the Reprint Console lets you select any combination of labels for reprinting.*

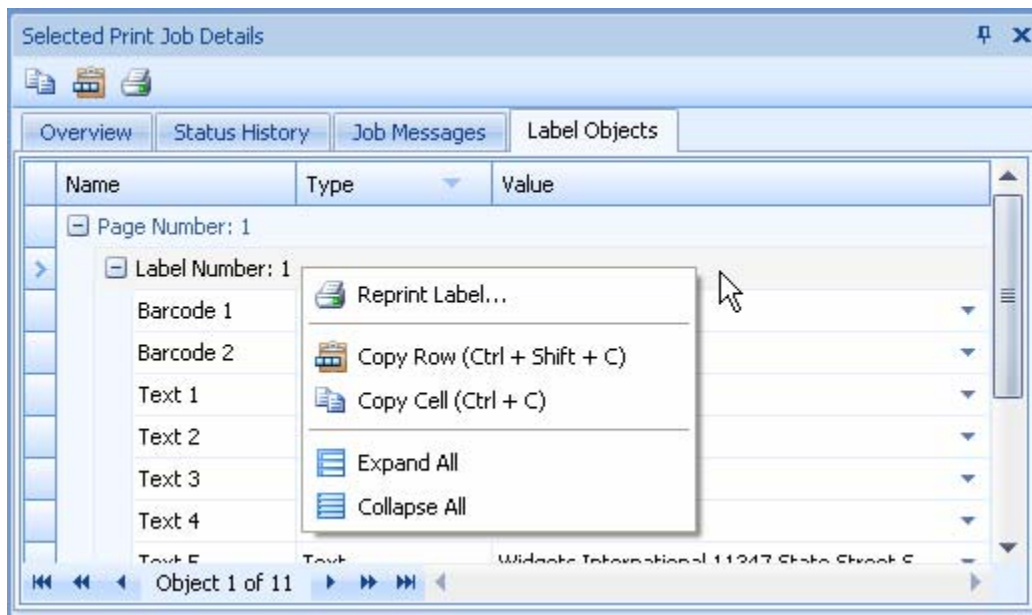
Once you have manually enabled all of the check boxes for the labels that you want to reprint, simply right-click anywhere in the Label Number sub-pane for the option to reprint.

### *Reprinting Labels with History Explorer*

Because History Explorer's primary function is the inspection of past label jobs, it does not make it quite as easy as the Reprint Console does to navigate to the desired labels to reprint. Also, History Explorer can only reprint one or all of the labels in a past job. Simply right-click on a selected job or label and choose the “Reprint” option, as shown in the screen images below.



*Right-click on a print job in History Explorer to see the option of reprinting the entire job.*



*Right-click on a label in History Explorer to see the option of reprinting just that label.*

### *Remote Print Job Execution*

Whether you are more experienced with BarTender, Microsoft Word, or other Windows programs, chances are that you have already experienced how easy it is to output documents and labels to printers attached to other computers on your network. This functionality, called “network printing,” simply takes the printer code output from a program running on one computer and sends it over the network to a printer located elsewhere. Understanding this very basic description of network printing (supported by Windows since the early 1990s) is a helpful first step to understanding the remarkable ability of both Reprint Console and History Explorer to actually submit print job requests to copies of BarTender running on other network computers.

### *Send Requests for Label Reprint Jobs to any Network Computer*

With any of the three Enterprise editions of BarTender, both Reprint Console and History Explorer can perform standard “network printing,” as described above. However, with the Enterprise Print Server edition of BarTender installed, you gain access to a whole new level of enterprise printing power. Instead of merely sending the printer code from your print job over the network to another printer, Reprint Console and History Explorer can instead transmit just the *request* to execute a print job to a copy of BarTender running elsewhere. In human terms, such a request might look a little bit like this:

Hello, Mr. BarTender running on the computer down in Shipping. Please read the data from the label job originally printed at 1:17PM on the 7<sup>th</sup> of July, 2008. Then, reprint the job using your SpeedyBrains brand label printer.

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Although the actual reprint request is somewhat less readable by humans than the above example, it is almost as brief. That means that, in just a few fractions of a second, Reprint Console or History Explorer can forward a label reprint request to a remote copy of BarTender running on another computer. This is faster and more efficient than sending a large quantity of printer code across your network and it is the easiest way to ensure that a label job gets reprinted using the original computer and printer. The centralized SQL Server database log supported by the Enterprise Print Server edition of BarTender is the key component that makes this possible. This is because, no matter where on the network a desired copy of BarTender is located, and no matter where you are running the Reprint Console from, the entire BarTender Application Suite (Enterprise Print Server edition) can access the same, centralized print job log database.

### *Improved Flexibility and Fault Tolerance*

It's nice to know that you can so easily recreate the *exact* conditions of a label print job from any computer on your network. But what if the original computer is no longer functioning or the printer has been moved? No problem! When used with the Enterprise Print Server edition of BarTender, the Reprint Console and History Explorer can (regardless of where the print job originated) redirect any label reprint job to:

- Any copy of BarTender
- On any computer on the network
- Using any network printer

That means you don't have to worry about your original hardware and software configuration. Even if you want to use a completely different brand of printer that uses a totally different printer language, you can still reprint labels from past print jobs.

## **New Integration Features**

Over the years, many of BarTender's most powerful and important features have been dedicated to controlling (or "automating") BarTender from within other software. Version 9 continues this tradition with a variety of new and enhanced integration features.

### *Comparing ActiveX to XML Script*

Prior to the release of BarTender version 8.0, ActiveX Automation was the primary method of writing code to achieve powerful and flexible control of BarTender from within other programs. Each line of ActiveX Automation code would either:

- Request the execution of a single BarTender command.

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- Submit a command line string to BarTender that defined an entire print job.

(Use of the Commander integration utility is not considered in this discussion because it does not necessarily require the addition of custom code in the controlling application.)

With version 8, the Enterprise Print Server edition of BarTender introduced the ability to accept “XML Scripts.” These are XML-formatted blocks containing *multiple* BarTender commands. Because only a single ActiveX Automation command is required to pass this extended sequence of XML Script commands to BarTender:

- ActiveX communication overhead is significantly reduced.
- Controlling applications can more easily execute other tasks while they wait for BarTender to finish executing the XML Script.

### *Similarities between ActiveX and XML Script Automation*

The main similarities between ActiveX Automation and XML Script Automation are:

- Both are used to control BarTender.
- Blocks of XML Script commands are commonly passed to BarTender using ActiveX Automation commands.

### *Differences between ActiveX and XML Script Automation*

The main differences between ActiveX Automation and XML Script Automation are:

- ActiveX Automation is available in all three Enterprise editions, whereas XML Script support is only provided by the Enterprise Print Server edition.
- An XML Script can contain a large number of BarTender commands, whereas ActiveX Automation can only submit a single BarTender command at a time. This reduces integration overhead.
- An XML Script can contain the actual data for a label job, whereas ActiveX Automation can only provide a link to an external file containing the label data.

BarTender 9.0 continues to support automation based on both ActiveX and XML Script and new capabilities have been added for both.

### *Learning More about ActiveX and XML Script Automation*

The best place to read details about the latest, full range of BarTender's ActiveX and XML Script automation capabilities is in the BarTender help system:

- Within the BarTender help system, click on the “Contents” tab.

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- Click on the “+” symbol in front of the Automating BarTender topic to reveal three automation topics.
- Each of the three available topics contains a “reference” guide that lists all available commands and capabilities.

There are also three ActiveX Automation white papers on our web site. They provide a good overview of BarTender's traditional automation techniques, but they are not as up-to-date as the BarTender help system, particularly with regard to XML Script.

### *New ActiveX Automation Capabilities*

The new ActiveX Automation capabilities added to version 9 of BarTender are listed below.

#### *Export “Print Preview” Images*

When manually printing from within BarTender, you have long had the ability to “preview” your print jobs on screen instead of having to send them to the printer. This lets you confirm that your labels look the way you want without your having to necessarily waste labels. Now, in version 9, you can preview BarTender print jobs from within other software as well. That means that software developers that use other applications to “front-end” BarTender can now display bitmap previews of BarTender print jobs. You can pass parameters to BarTender to specify:

- How many print job labels to preview
- Root graphic name to use
- Graphic type
- Resolution
- Size
- Image quality

#### *Notification of Command Line Completion*

One of the three current methods of launching BarTender print jobs using ActiveX Automation is to pass a “command line” string to BarTender. This text string is then “parsed” by BarTender to extract the various parameters that define the print job, such as:

- What label format to use
- Which printer to print to
- What data file to read

You can pass multiple command lines to BarTender as fast as your controlling application is capable. BarTender simply buffers the command lines as they are received and processes them

in the order that you generated them. However, sometimes you may wish to not submit a new print job until the previous one has completed. For this purpose, version 8 of BarTender gave controlling applications the ability to perform a status inquiry of BarTender (or “poll” it) about whether or not it is busy. However, no further information beyond the busy status was provided. For example, if multiple jobs were queued up for printing by BarTender, your controlling application had no way of knowing which one was being processed.

Version 9 of the Enterprise Print Server edition of BarTender introduces “asynchronous” notification of the controlling application each time BarTender has finished processing an ActiveX Automation command line. Combined with the status inquiry, controlling applications can now not only know whether or not BarTender is busy, but which print job is being processed.

### *Handshaking Terminology Review*

“Handshaking” describes the means by which two or more programs or computers talk to each other. When it comes to the method by which two programs communicate status information, there are generally two basic types of handshaking:

- Polling or “Synchronous” Status Communication: The “polling”-based communication of status information is also referred to as being “synchronous” because the controlling application can only learn of information at the time that it explicitly asks for it. This method requires the controlling application to repeatedly poll (or ask) for status information until the information changes. Some people find this the easiest status inquiry method to write code for, but it can result in the controlling application wasting a lot of time waiting for the status to change.
- Event-Driven or “Asynchronous” Status Communication: In contrast, with the *asynchronous* communication of status information, the controlling application defines an event for the target application to call when the status changes. With this approach, it is not just one program talking to another, but both programs *talking to each other*. The advantage is that the controlling application doesn't have to continuously ask and re-ask, “Are you done yet,” which leaves it more time to execute other tasks. (Within the context of asynchronous communication, “event-driven” and “interrupt-driven” mean the same thing.)

With this terminology review in mind, we can better understand the statement that execution of ActiveX Automation command lines by BarTender has long been “asynchronous.” This is because your programs could pass command lines to BarTender as fast as possible and then go off and do other things without regard for how long BarTender takes to process each job. As we have already discussed, however, with BarTender version 8, if the controlling program needed to know if BarTender was done printing, it had to repeatedly “poll” BarTender until BarTender was no longer busy. This means that, even though the launching of each

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command-line-generated print job by BarTender is asynchronous, the status response provided by version 8 was still *synchronous* and therefore not as efficient as possible. In contrast, with version 9, the option of an *asynchronous* status response is also available. This allows programs to go off and do other things until they are notified by BarTender that its status has actually changed.

### *New XML Script Capabilities*

In addition to new ActiveX Automation capabilities, BarTender's XML Script interface has also been enhanced.

#### *Addition of XML Script Response*

We have already described how the use of XML Script allows a single ActiveX Automation command to initiate execution of multiple BarTender commands. With version 9.0 of the Enterprise Print Server, BarTender does for command response what version 8.0 did for commands. Previously, the ActiveX Automation response returned to the controlling program from BarTender was a collection of message strings that provided general feedback about possible errors encountered during script execution. Now, with version 9.0, a controlling application can also optionally receive back an XML-formatted response. That means that, instead of just a simple collection of strings, BarTender can return much more detailed status information. This is because an XML-formatted block of data can assume an arbitrarily complex structure and still be properly received by the calling program.

Simple response messages can contain:

- Job error messages
- Print job completion status
- Specific data for the command

More complex responses can include:

- Summary information about the label printed
- The actual label data itself

#### *New XML Script Commands*

Version 9 of the Enterprise Print Server edition of BarTender also introduces a number of new XML script commands. The best place to find the latest documentation on BarTender script commands is always in the BarTender help system. (See the "Automating BarTender" topic on the Contents tab.)

### *New Commander Capabilities*

Use of Commander has long been the preferred method of controlling BarTender from within applications to which you cannot easily add custom ActiveX Automation code. However, even when ActiveX is a viable option, some integrators still prefer to control BarTender without have to write code. In one very simple scenario, your controlling application simply “dumps” a text file into a folder. Commander then “wakes up” BarTender, which reads your data and prints your labels. (Besides text files, other supported trigger types include e-mail messages and TCP/IP network packets.)

With version 9 of BarTender, Commander has been enhanced with the capabilities that follow.

### *Add and Modify Tasks without Stopping the Commander service*

Commander has long supported the ability to configure and load multiple “tasks,” each one of which is a predetermined response to a given trigger. From time to time, you may want to add a new task or change some aspect of the way an existing task responds to a trigger. In the past, this required that you stop the Commander service and then restart it, during which time Commander is not available to respond to any triggers that might occur. With BarTender version 9 (all Enterprise editions), you can expand your list of active Commander tasks without shutting down the Commander service. In addition, if you need to modify an existing task, only that task needs to be stopped and restarted. Your other tasks will continue to run uninterrupted. So if, for example, you have different tasks supporting different departments or geographic regions, you can service or modify some of them without shutting down your entire operation.

### *New Messages for Starting/Stopping the Commander Service*

With Bartender version 9.0 (all Enterprise editions), Commander can be configured to transmit an e-mail message any time the Commander service stops or starts. So, for example, if Commander suddenly started operating on one of the passive nodes of a Windows Cluster Server, you could be notified that a “back-up” instance of Commander is now running and your message could even include selected cluster information.

### *New Transform Capabilities*

One of the most important benefits of building BarTender integrations around Commander is the reduction and sometimes elimination of custom programming. In the simplest case, your controlling application simply dumps text to a file that serves as a “trigger” to Commander to request a BarTender print job. Depending on the structure of the Commander integration, Commander may simply tell BarTender where to look for the label data, or actually extract the label data from a trigger file and pass the modified contents on to BarTender.

Commander can parse trigger files to extract information such as:

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- Control parameters for Commander.
- Control parameters for Bartender.
- Label data to be passed on to BarTender.

However, the text file exported from the controlling application may not necessarily be formatted in a manner that is fully compatible with Commander and/or BarTender. Accordingly, to minimize the likelihood of custom programming being required, Commander has offered a number of functions to “Transform” the format of the trigger. (For more detail on Transforms, please see the Contents tab of the Commander help system and look under Task Properties, Command(s) Tab, Transform. Or, just search on “Transform.”)

With the introduction of BarTender version 9, the Enterprise Print Server edition of Commander provides a number of new transform functions.

### *New “Search and Replace” Transform*

Version 9 of the Enterprise Print Server edition of BarTender adds a “Search and Replace” transform. This works like an automatic version of the search and replace function in a word processor to search for and replace occurrences of predefined existing text strings with other strings.

### *Support for Multiple Consecutive Transforms*

Previously, Commander could only apply one transform to an incoming trigger. Now, with version 9.0, you can have Commander apply as many consecutive transforms as you wish. This makes it more likely that you can find a non-programmatic way to reformat generic text output from a controlling program into a format that makes sense to Commander.

### *Export to File*

After Commander finishes transforming the format of a trigger file (or trigger message, if it arrived by e-mail or network transmission), the Commander task to be executed maintains access to a temporary copy of the transformed trigger in memory. However, Commander’s transforms of the trigger contents are not limited in usefulness to just Commander; it is also sometimes useful to forward selected information from the trigger to BarTender. If this is done using ActiveX Automation, then no further action is required. However, sometimes it is desired to have BarTender read the information from a file instead of receiving it as part of an ActiveX Automation communication. For this purpose, the latest upgrade to Commander’s transform capabilities includes the ability to export the transformed trigger to a text file.

## Other New Features in BarTender 9.0

BarTender 9.0 also introduces the following additional features.

### *Enterprise Support for up to 8,000 Printers*

With the release of BarTender 9.0, the maximum number of active printers that can be supported by a single multiple-printer license of BarTender (any Enterprise edition) has been increased from 1,000 up to 8,000. (For pricing on high volume Enterprise printer licensing, please contact your Seagull Scientific reseller.)

### *Read Label Graphics Directly from a Database Field*

The Professional and Enterprise editions of BarTender have long been able to read character data from databases and text files. However, when printing changing graphics on labels, BarTender has until now been limited to reading text-based *links* to graphics files on disk, instead of reading the graphic images directly out of a database. That means that, in order to print (for example) a job of 500 labels with different graphics on each one, you would need access to 500 image files stored on disk.

Many modern databases can store not only text and numbers, but also binary objects of nearly unlimited size and content. These BLOBs (for Binary Large Objects) don't consume any less space on disk. However, some people consider it cleaner and more organized to read label graphics out of the exact same tables from which they are reading the rest of their label data, instead of from a separate location on disk.

#### *Read from Database*

Version 9 of BarTender adds support for the reading of graphics from database tables.

#### *Read from Text File*

You simply cannot directly store binary data in a text file. However, by encoding graphics using the Base64 text format, you can store graphics within text files in a format that BarTender 9.0 can decode.

### *Manually Load and Execute XML Script from Inside of BarTender*

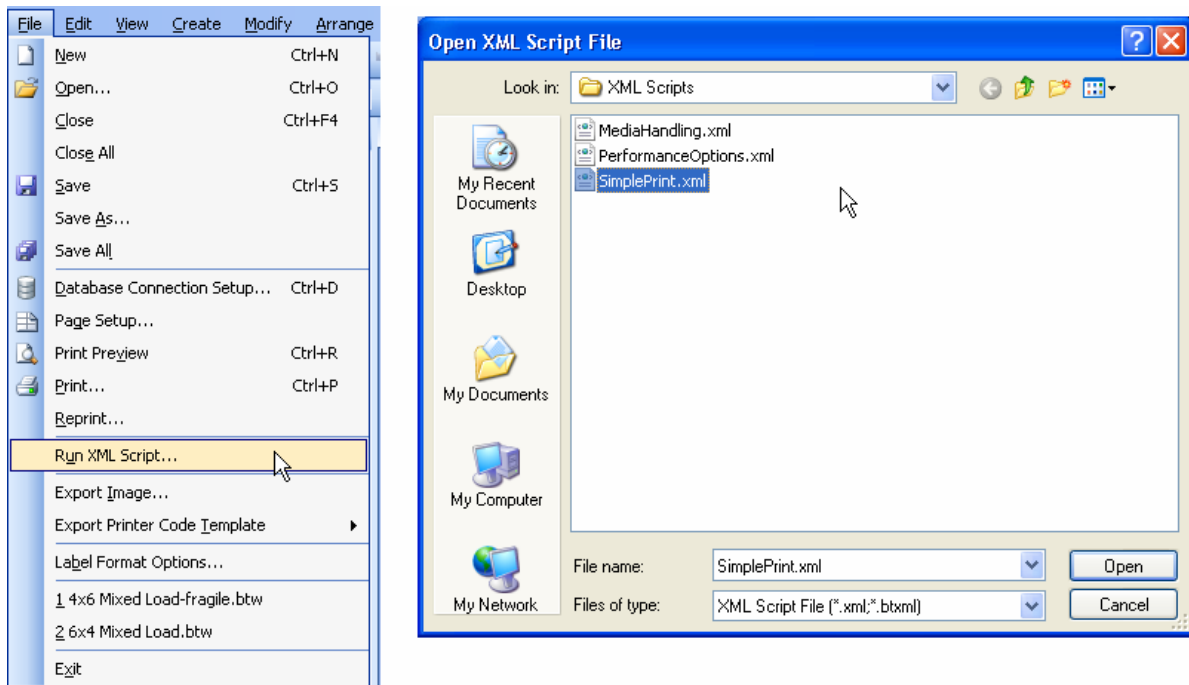
We have already discussed how a controlling program can execute a single ActiveX Automation command to pass *many* commands to BarTender within an XML Script. You can also submit XML Scripts to BarTender from Commander. Both are great methods to control BarTender from within other programs. However, XML Script is so flexible that you may want to take advantage of it to automate BarTender from within BarTender itself. This is not as weird as it sounds.

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Suppose that you had multiple BarTender actions that you frequently repeated in the exact same order. For example:

1. Load the label format “Crate\_17.BTW.”
2. Specify the reading of label data from the table “Today’s Batch.”
3. Temporarily override the stored printer with “Acme Thermal Labelator.”
4. Set the number of label copies to 2.
5. Start print job.
6. Load the label format “Shipping\_labels.BTW.”
7. Start another print job.

In this totally arbitrary example, you can see that (if you had to do this every single day) it could be desirable to have some sort of “automation.” Fortunately, the above-described actions are exactly the kind of thing XML Script commands are designed to address. It’s just that, in our current example, we want to manually load and run the script from inside of BarTender instead of receiving it from another program. If you have ever used a “macro” from inside of MS-Excel or MS-Access, manually running an XML Script from inside of BarTender is very similar. The main difference is that you would typically create an XML Script using a text editor. Then, using the File, Run XML Script option in BarTender, you navigate to an XML Script stored on disk, load it, and execute it.



*You can manually load and execute XML Scripts from within BarTender to automate common multiple-step procedures.*

## **Available Seagull White Papers**

### General White Papers

- The Advantage of Drivers by Seagull
- Choosing the Right BarTender Edition
- BarTender Web Print Server
- What's New in the Latest BarTender

### Integration White Papers

- Integration Overview
- Commander
- Commander Examples
- Exporting Printer Code Templates
- Using BarTender with Terminal Services and Citrix MetaFrame
- XML Integration with Oracle's WMS and MSCA

### Integration Using ActiveX

- Getting Started with ActiveX Automation Using C#
- Getting Started with ActiveX Automation Using VB.NET
- Getting Started with ActiveX Automation Using VB6

### Integration With SAP

- SAP Integration Methods
- Reading SAP IDocs
- SAP Auto Infrastructure Integration with BarTender

### Miscellaneous White Papers

- BarTender Enterprise Licensing
- Printing International Characters Using BarTender
- BarTender Software Activation
- Using BarTender's Application Identifier Wizard
- Optimizing Label Printing Performance
- Status Monitor Overview
- Silent Install

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